

ANATOMY

Epitomized and Illustrated :

CONTAINING,

- I. A concise and plain Description of all the Parts of the HUMAN BODY; together with their various Uses in the ANIMAL OECONOMY.
- II. A large and choice Collection of SCULPTURES, exhibiting a *just Idea* of the FIGURE, SIZE, SITUATION, CONNECTION, and USES of the several Parts of the BODY, in Seventeen *Folio* COPPER-PLATES.

By M. N. B. A. ✕

Etiam dudum observaveram, nihil gratius, vel utilius, fieri his, qui Actiones Corporis humani speculantur, quàm ut penitus intelligant mirandam ejus Fabricam. — Ideo dedi operam ut indicarem ubique accuratissimas Tabulas, in quibus Auctorum in his principum sincera sapientia Corporis Structuram verissimè depinxerat.

H. BOERHAAVE, *Præf. ad Instit. Med.*

L O N D O N :

Printed for JOHN NOON, at the *White Hart*, near *Mercers-Chapel*, in *Cheapside*.

M DCC XXXVII.



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containeth three great Parts, viz. { HYGROLOGY. }

OSTEOLOGY contains

OSTEOGENY, which treats of the *Genesis* of a Bone under its several original States; viz. of

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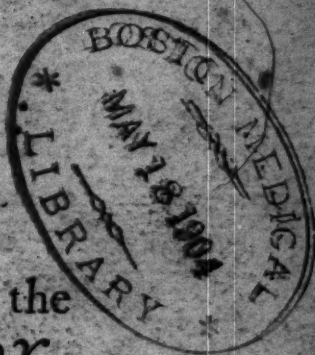
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Anatomy Epitomiz'd

BEING A

Concise DESCRIPTION of all the
PARTS of a *HUMAN BODY*.



NATOMY is an *artificial* *ANATOMY*
Dissection of an Animal Body; ^{defined.}
with a View to advance a
true and adequate Science or
Knowledge of the *Matter*,
Figure, *Size*, *Situation*, *Con-*
nection, and *Uses* of the component Parts
thereof; to satisfy the Purposes of *Physic*,
Surgery, *Physiology*, and other Sciences which
require an Acquaintance therewith.

THIS Art is divided into three great Parts, ^{Divided into}
viz. (1.) *OSTEOLOGY*, or the Doctrine of ^{Osteology,}
Bones in general. (2.) *SARCOLOGY*, ^{Sarcology,}
which treats of all the *fleshy* Parts of the ^{Hygrology.}
Body. (3.) *HYGROLOGY*, which describes
the several *Fluids* or *Humours*, as the *Blood*,
Urine, &c. in an animal Body.

B

OSTEO-

ANATOMY epitomiz'd.

*Osteology sub-
divided into
Osteogeny,
Osteography,
Synostology.*

OSTEOLOGY is again subdivided into three Branches. (1.) **OSTEOGENY**, which treats of the *Origin, Genesis, or first Formation* of the *Bones*, as to the *Matter and Manner* thereof. (2.) **OSTEOGRAPHY**, which treats of the *Bones* and their several *Parts*, or the *Knowledge of the Structure of the Human Skeleton*. (3.) **SYNOSTEOLOGY**, which explains all those *Parts* of a *Bone*, by means of which the various *Articulations* are effected, or *Bones* conjoin'd to *Bones*, in the whole *Compages* of the *Skeleton*.

*Sarcology sub-
divided into
Myology,
Splanchnology,
Angiology.*

SARCOLOGY is also divided again into three principal *Parts*. (1.) **MYOLOGY**, or *Doctrine of the Muscles*. (2.) **SPLANCHNOLOGY**, which treats of the various *Viscera* or *Bowels*, and the great *Organs* of animal *Life*, as the *Brain, Lungs, &c.* (3.) **ANGIOLOGY**, which describes the several *Kinds of Vessels, or Vascular Parts* of the *Body*, as *Glands, Receptacles, Arteries, Veins, &c.* shewing their *Nature and Uses*.

IN **HYGROLOGY** we make no Subdivision ; and therefore shall return and begin our *short Survey* of the *Human Body* with

Of Osteogeny.

OSTEOGENY, the first *Part* of **OSTEOLOGY** ; and which treats of the *Generation* of the *Bones*. In order to have a clear *Understanding* of which, 'tis necessary first to premise also the *Genesis* of a *Fibre, Membrane, and Cartilage*, since they are the
great

ANATOMY epitomiz'd.

3

great Instruments concern'd in *Offification*; and of which (especially *Fibres* and *Membranes*) the more compound Parts of the Body do consist. Therefore

AMONG the Fluids in *Ovo*, there is (saith *Boerhaave*) a *peculiar, terrestrial, nutritious, fluid Matter*; the Particles of which, soon after *Conception*, begin (by the *plastic Power* of Nature) to cohere, unite, and form themselves into very fine *Capillaments* or *Threads*, which we afterwards call *Fibres*. Of these *Fibres*, some are, in their mature State, soft, flexible, and elastic; and are *hollow* or *spongy*, as the *nervous* and *fleshy Fibres*; some are *solid, flexible*, and *very springy*, as the *membranous* and *cartilaginous Fibres*; and others are hard and inflexible, as those in the *Bones*. And of all these some are *sensible*, others *insensible*; some *visible*, others *imperceptible*; some *simple*, of which others are *compounded*. Of the Generation of Fibres

THE *Fibres* thus form'd strike into various Directions, according to the Nature and design'd Form of the Part; and being thus interwoven in manner of a very fine *Web*, they constitute a thin, white, broad, elastic Substance, which we call a *Membrane*; they are composed of *nervous Fibres*, which give them an *elastic Power* and an *exquisite Sense*, which make their *Contractions*. The Original of Membranes.

WHEN *Membranes*, consisting of a proper Species of *Fibres*, become hard and dry, The Genesis of Cartilages.

by the gradual *Coalescing* and *Concretion* of the *vascular Fibres*, they degenerate into an hard, thin, white, elastic Substance, called a *Cartilage*; which are supplied with *Blood Vessels*, and very probably with *Nerves*, and therefore are not altogether destitute of all manner of *Sensation*, as some suppose. They cover the Ends of the Bones, and thus adapt them for Articulation and Motion without Pain or Difficulty, by means of their great Smoothness or *Lubricity*, and *obtusè Sensation*.

Of a Ligament.

A *LIGAMENT* is a white solid Body, harder than a *Membrane*, and softer than a *Cartilage*; they consist of a Bundle of *insensible Fibres*, and their chief Use is to fasten the Bones in Articulation.

Of the Composition of the Parts of the Body.

SUCH are the *Rudiments* of the Body originally; for as of *Fibres* are made the several *Membranes*, *Cartilages*, and *Ligaments*, so of some or more of these conveniently disposed, results the System of *Nerves*, *Veins*, *Arteries*, *Muscles*, and *Bones*. Lastly, from the various *Texture* and different *Combinations* of some or all of these Parts, the more compound *Organs* are fram'd; such as the *Brain*, *Eyes*, *Lungs*, *Stomach*, *Liver*, *Legs*, *Arms*, &c. the Sum of all which make up the Body.

The Generation of the Bones.

BUT the *Generation of the Bones* is the thing more particularly here intended; concerning which an * ingenious and skilful Anatomist, from divers Experiments, has lately

* Dr. Nesbitt, in his *Osteogeny*

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lately oblig'd the World with a *new and curious Theory*, exploding the old one at the same time, viz. *That All Bones are form'd from Cartilages*. I shall only mention, in a few Words, the Substance of his new *Theory of Ossification*, and refer the Reader to his *learned Lectures* for the Grounds and Confirmation thereof.

THIS *Theory* makes *two Species of Ossification*; for, as was before observed, all Bones do originally consist of *Membranes*, and *cretaeous* or *bony Particles* or *Corpuscles*, so as that the former only furround and keep together the latter: And therefore when these *bony Particles* are first secreted from the Blood, they begin to be deposited, or to shoot, either, (1.) *Between Membranes*; or, (2.) *Within Cartilages*. And hence arises the aforesaid twofold Doctrine of *Osteogeny*.

Of the two Species of Ossification.

THOSE which shoot between Membranes form most of the hardest and most solid of the *Fœtal Bones*, and appear first of all. The *Texture* of this *Species of Ossification* is found, by a careful and proper Examination, to be of small Particles, so conjoin'd together, as to form *fine bony Threads or Fibres*, which are differently disposed in various Directions conformable to the design'd Figure of each future Bone, and its several Parts. This is visible in thin broad Bones, as those of the Skull, about 10 or 12 Weeks after Conception; when the beginning of an *Ossification* has the *Appearance of an exceeding*

The first Species of Ossification.

ing

ing *fine and irregular Piece of Network*, the Middle of which is much closer and finer than the Circumference, and is so thin, that without great Care it can't be taken from between the Membranes which cover it.

PLATE I.
Fig. VI.

IN Subjects a little older, these *Bony Particles* become gradually increas'd, and so conjoin'd, as to produce an Appearance of *small, fine, bony Threads or Fibres*, which then appear a little like *Radii* shooting from a Center. All the small *Furrows* or *Vacancies* between these *Fibres*, have, by Injections, been demonstrated to be only *Passages* for *Blood-Vessels*. And as the *Fœtus* grows bigger, the *Bony Fibres* increase, condense, and become attracted or press'd so close together, as to admit no more new *Matter* to be deposited between them. Thus a single *Lamina*, or Plate, of this sort of Bone is produced.

As the Bone continues to grow and increase in Size every way, many *Strata* or Layers of similar Plates are, by the *Bony Fibres* shooting on one another in the manner just describ'd, gradually generated; by which the more solid Part of a Bone is form'd. It is observable that the inner *Lamine* are *less solid* and *more porous* than the exterior; and none attain their *perfect Solidity* till the Part has done growing in Bulk.

AFTER much the same manner the *Lamine* are form'd, of which the more solid Part of *Cylindrical Bones* are made up. Their

Ossifications

Offifications begin while the Circumference of the Part is not greater than a small Pin, in the Form of a *broad flat Ring* between the internal and external *Periosteum*. As these Rings increase in Breadth, their Fibres shoot towards both Extremities of the Part, not always in strait Lines, but according to the particular and design'd Figure of the Bone.

WHAT seems in perfect *Bony Laminae* to be Pores, are Passages for Blood-Vessels; and the *cellular* or *cavernous* Parts of Bones, or *Meditullium*, are Receptacles for the *Folliculi*, or small Bags of Marrow; to the Intervention of which, the Cells or Caverns owe their Formation.

PLATE I.
Fig. XXV.

THE second Species of *Offification* is that which begins within a Cartilage: This appears late, and at very distant Times, in different Parts. Its soonest Appearance, which is either in the *Ossa Illi*, or some of the *Vertebrae*, is not till about two Months after Conception; and when latest, not till many Years after Birth. The *Offification* here begins from a Point, and gradually increases to a considerable Body, in small Spines; tho' in other Parts where the *Offifications* are not finish'd in some Years, the *Bony* Particles appear to be deposited frequently in various Parts of the *Cartilage*, in distinct Clusters irregularly situated; all which afterwards perfectly unite.

The second
Species of
Offification.

IN the *Cartilages* of almost full-grown *Fetus's*, in which are found any *Offifications* beginning,

PLATE I.
Fig. XXVI,
XXVII,
XXVIII,
XXIX, XXX,
XXXI.

beginning, or Tendencies thereto, not one *Bony Particle* is to be perceiv'd or felt, in any Part, before there is a visible Influx into the *Cartilage* of a Fluid, different from what used to flow thro' them: And many of those Vessels, which while the Part continued totally cartilaginous, without a Tendency to *ossify*, were too fine to be distinguished or perceived by the best *Microscopes*, and consequently too small to admit the red Globules of Blood, appear to have been, by a more than usual Afflux of Fluid, so much dilated as to receive a Quantity of red Globules sufficient to render some Part of them distinctly visible to the naked Eye, and to cause the Appearance of an Inflammation about the Part where the *Ossification* is to begin, and round it always when just begun to be apparent, and frequently after it is considerably increased.

THE first small *Corpuscles* of Bone that become visible, are always in that Part of the *Cartilage* which has the greatest Quantity of *red Fluid*; they are not always placed close together, but frequently at small Distances from each other; and these *Bony Particles* are often to be felt with the Point of a Knife in some Vessels much dilated and full of Blood, or a similar Fluid. Yea, if the *Cartilage* be slit into thin Pieces, and dry'd between two Planes of Glass, there may, with the naked Eye, but better with a *Microscope*, be seen the Appearances of these
Bony

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Bony Particles, or somewhat analogous to them.

MOST of the Bones thus generated within Cartilages, are very *spongy* and *cellular*; the Size and Figure of the Cells being regulated by the *medullary* and *vesicular* Substances contained within them; and their external and more solid Parts are composed of *Bony Threads*, disposed according to the Shape of the Part.

VERY soon after the Parts, which remain not long after Conception wholly cartilaginous, begin to ossify, their Increase is manifestly more from the *Accretion* of the *Bony Corpuscles*, than from the *Substance* of the *Cartilage*, according to the Notion hitherto erroneously received. Yea, the Independency of *Fætal Bones* on the Cartilages is easily made apparent, if any of them, while the Cartilages surround the Bone, be kept a sufficient time in Water; for then, upon flitting the Cartilage, the Bones will, when the large Vessels are divided, as easily slip out of it, *as an Acorn out of its Cup*, when ripe. And by the Smoothness and Polish of the Parts both of *Bone* and *Cartilage*, which were in Contact, it is very manifest there could be no Intermixture of their Particles, nor Continuation of the Fibres of one Substance to those of the other; and indeed a bare View of the different colour'd and *heterogeneous Particles* which make the two *immediate* and *contiguous* Surfaces of Bone

C

and

PLATE I.
Fig. XXXII.

ANATOMY *epitomiz'd.*

and Cartilage, is enough to convince any one, who rightly considers the Matter, that this new Doctrine of *Osteogeny*, in both the *Species of Ossification*, is *more than probably true*.

THIS excellent Author, in his second Lecture, in a most observable Manner, sets forth the gradual Process of Nature in the Production of the Bones in the several Parts of the Body, and points out the several *Intervals* of Time from *Conception*, wherein she *begins, continues, and finishes* this admirable Part of her Handywork; which therefore can't but be highly agreeable to all who have any Concern to know how *fearfully and wonderfully they are made* in these Respects, and to which they are referr'd as the only Piece worthy their Perusal on this Subject.

Of Osteography.

OSTEOGRAPHY is the second Part of *Osteology*, and teaches the Knowledge of the *Fabrick and Compages* of an human Sceleton in the human Anatomy.

A Sceleton defined.

A *SCELETON* is the whole *System* of Bones of an Animal Body, clear'd of their *Flesh*, and join'd together in the Order and Manner as they existed naturally in the Body.

I SHALL here give a succinct Account of all the considerable Bones in every Part of a human Sceleton. And first I shall begin with a Description of the Bones of the Head.

The Bones of the Skull.

THE Bones of the Skull, or *Cranium*, are *six proper, and two common* to it and the
Upper

ANATOMY epitomiz'd.

II

Upper Jaw. The Bones proper to the *Cranium* are, (1.) The *Os Frontis*, or Forehead-Bone, which is of a roundish Form, and makes the Fore-part of the Skull, and has four *Apophyses* at the four Angles of the two Orbits of the Eyes, and is perforated with two Holes above the Orbits, through which pass a Vein, Artery, and some Twigs of the first Branch of the fifth Pair of Nerves. (2.) and (3.) The two Bones of the *Sinciput*, call'd *Parietalia*, being, as it were, the *Side Walls* of the *Cranium*, one on each Side. They are the thinnest Bones of the Skull, are almost square, and somewhat long; are join'd to each other in the Crown of the Head; and to the other Bones, in other Parts: They have a small Hole near the Top of the Head, for the Passage of the Veins, &c. (4.) and (5.) The *Ossa Temporum*, or two Bones of the *Temples*, situated in the lower Part of the Sides of the Skull: They are small, and of a circular Figure, are thin on the upper, but thick on the lower Part; which, being very hard, is call'd also the *Os Petrosum*, or *Stony Bone*. They have each *three external Processes*, viz. the *Zygomatic*, *Mastoid*, and *Styliform Process*; and *one internal* one, which, being pretty long and big, contains all the *Mechanism* of the internal Ear. They have each two internal and four external Holes, the former for the Egress of Nerves, the latter for the Purposes of Hearing and other Uses. (6.) The *Os Occipitis*, or Bone of the Back of the Head.

Os Frontis.

Ossa Parietalia, or Bones of the Sinciput.

Ossa Temporum, or Bones of the Temples.

Os Occipitis.

of the hinder Part of the Head; it is in Form like a *Lozenge*, with its lower Angle turn'd inwards; it is thicker than the other Bones of the Scull, is externally rough, and internally it has two *Sinus's*, in which lie the two Protuberances of the *Cerebellum*; it has seven Holes, through the largest of which the *Spinal Marrow* passes to the Back-bone, and the rest serve for the Passages of *Arteries*, *Veins*, and *Nerves*. This Bone has also two *Apophyses*, one on each Side the great Hole; they are lined with a *Cartilage*, and articulated with the first *Vertebra* of the Neck, and is longer in *Beasts* than in Men.

Os Sphænoïdes. THE two Bones common to the Scull and the Upper Jaw, are, (1.) The *Os Sphænoïdes*, or *Cuneiforme*, the Wedge-like Bone, tho' it be of a very irregular Form; it is situated in the Middle of the Basis of the Scull, and join'd to all the Bones thereof by the *Sphænoïdal Suture*, except in the Middle of its Sides, where it is continued to the *Ossa Petroſa*, as if they were one Bone. On its Outside it has five *Apophyses*, and on its Inside four, serving to various Uses: It has twelve Holes for the Exit of several Pairs and Branches of Nerves, and the Entrance of Arteries, as the *Carotidales*, and those of the *Dura Mater*.

Os Ethmoides,
or *Cribriſorme*

(2.) The *Os Ethmoides*, *Cribriſorme*, or Sieve-like Bone; it is also call'd *Os Spongioſum*, or spongy Bone, because it is perforated by a Number of small Holes, through which pass the Fibres of the

Olfactory

Olfactory Nerve to the Nose: It is situated in the Middle of the Basis of the *Os Frontis*; from its under Side goes a thin Bone which divides the *Cavity* of the *Nose* into two *Nostrils*. On each Side this Partition are several thin spongy Substances, serving to the Use of *Smelling*; and the *Secretion* of *Pituitous Matter* from the Brain, is reckoned a *secondary Use* of this Bone.

THE Bones of the *Upper Jaw* come next to be considered in the *Skeleton*. They which are proper to it are *eleven*, five on each Side, and one in the Middle. (1.) The first is the *Os Mali*, or *Zygoma*; it is of a triangular Figure; its upper Side makes the lower and external Part of the Circumference of the Orbit of the Eye; it is concave within, and, projecting forwards, makes the highest Part of the Cheek. (2.) The *Os Maxillare*, or *Jaw-Bone*; in it all the Teeth of the Upper Jaw are set; its Form is very irregular, and its upper Side makes the lower and internal Part of the Orbit of the Eye. This Pair of Bones makes the fore and greatest Part of the Roof of the Mouth. (3.) The *Os Unguis*; it is a little thin Bone which lies in the great Angle of the Orbit, and has a Hole in which the *Lachrymal Bag* lies; and thence is sometimes call'd *Os Lachrymale*. (4.) The *Os Nasi*, or *Bone of the Nose*; it is thin, but solid, and makes the upper Part of the Nose; upon its lower End the *Cartilages* of the *Nostrils* are fasten'd; it is smooth without, but

Its Use.

Of the Bones of the Upper Jaw.

Os Mali, or Zygoma.

Os Maxillare, or Jaw-Bone.

Os Unguis.

Os Nasi, or of the Nose.

but rough within. (5.) The *Os Palati*, or the *Bone of the Palate*; it is small and almost square, and makes the hinder Part of the Roof of the Mouth. (6.) The odd and last Bone is call'd the *Vomer*; it is situated in the Middle of the lower Part of the Nose, and in a Cleft, in its upper Side, it receives the *Septum Nasi*.

Of the Bone of the Lower Jaw.

THE *Lower Jaw* consists but of one Bone, in which the Teeth are set, and in Children is not perfectly hard till they are about two Years old; It is articulated into the *Sinus* of the *Os Petrosium*; it is perforated by four Holes, through which pass *Veins*, *Arteries*, and *Nerves*, for their destin'd Uses.

The Make of the Bones of the Cranium.

THE Bones of the *Scull* and *Jaws* do all consist of two *Laminæ*, or Plates, between which there is a thin and spongy Substance made of some *Bony Fibres*, which come from each *Lamina*, which in Greek is call'd *Diploe*, in Latin *Meditullium*; in it there are a great many *Veins* and *Arteries* which bring Blood for Nourishment.

Diploe, or Meditullium, what.

Of the Teeth and their Formation.

THE *Teeth* come next to be consider'd: They are the hardest, whitest, and smoothest Bones of the Body; they are form'd in the Cavities of the Jaws, which are lined with a thin Membrane, upon which there are several Vessels, through which passes a *thick, viscous, transparent Humour*, which, as it increases, hardens in the Form of *Teeth*, which is about the seventh or eighth Month after Birth, when they begin to pierce the
Jaw

Jaw and Gums with very sensible Pain.

The Teeth are sometimes 14, sometimes 15, and sometimes 16 in Number in each Jaw.

The Number of the Teeth.

They are of three Sorts, which appear at different Times. (1.) The first are call'd

There are three Kinds.

the *Incisivi*, or *Cutting Teeth*, which are the four foremost in each Jaw; they appear first, as being thinnest and sharpest; they are each inserted with a deep single and pointed Root.

Incisivi, or Cutting Teeth.

(2.) The next Sort are call'd *Canini*, or *Dog Teeth*; so call'd because round and pointed like the Teeth of Dogs; they are two in each Jaw, and one on each Side the *Incisivi*; they are deeply inserted in the Jaw by a single Root. (3.) The last Sort are

Canini, or Dog Teeth.

call'd the *Molares*, or *Grinders*, because with them we (as it were) *grind* the Aliments very small, which were only cut and grossly divided by the other; these come last of all, and have two, three, or four Roots separately inserted.

Molares, or Grinders.

FROM the Scull we descend to view the *Spine*, or *Back-Bone* in the *Skeleton*. The

Of the Spine and Vertebrae.

Spine is that Chain of Bones which reaches from the *Os Occipitis* to the *Os Coccygis*, in the Seat of the Body. These Bones are call'd

Vertebrae. In each *Vertebra*, the *Body* thereof and the *Processes* are to be consider'd. The

Of the Body of the Vertebra

Body of the *Vertebra* is on the Fore-part round and convex, and on the Hinder-part a little concave; it is softer and more spongy than the *Processes*, which are harder and more solid: Its upper and lower Sides

are

Of the Processes of the Vertebra.

The Chancel for the Passage of the Spinal Marrow.

The Vertebrae not uniform.

Their Number.

Of the Os Sacrum.

are plain and cover'd with a *Cartilage*, which is thick forwards, and thinner backwards, for the easy bending of the Body forwards. The *Processes* of each *Vertebra* are of three Sorts, (1.) Two *transverse* or *lateral*, one on each Side; in each of them there is a Tendon of the *Vertebral Muscles* inserted. (2.) Four *Oblique Processes*, two on the upper Part, and the same on the lower; by these the *Vertebrae* are articulated one to another. (3.) And one *Acute* on the hindmost Part of the *Vertebra*. The *Processes* with the concave Part of the Body of the *Vertebrae*, form a large Hole in the Body of each *Vertebra*; and all these Holes answering one another, make a Chancel for the Descent of the *Medulla Spinalis*, or *Spinal Marrow*, which sends out its Nerves to the several Parts of the Body by Pairs, through two small Holes between each superior and inferior *Vertebra*. The *Vertebrae* of the Neck differ somewhat in Form from those of the Back now describ'd. All the *Vertebrae* are tied together by a hard Membrane made of strong and large Fibres. The *Vertebrae* are twenty-four in Number; seven of the Neck, twelve of the Back, and five of the Loins; besides those of the *Os Sacrum*.

THE *Vertebrae* of the *Os Sacrum* grow so close together in *Adults*, that they make but one large, broad, and solid Bone, in Form of an *Isoceles Triangle*, whose Basis is tied to the last *Vertebra* of the Loins, the Upper-part

part of its Sides to the *Iliac Bone*, and its Point to the *Os Coccygis*. It has five Holes on each Side, but the Nerves pass only thro' the five on the Fore-side.

THE *Os Coccygis*, or *Cuckow Bone*, (as *Of the Os Coccygis.* somewhat resembling a *Cuckow's Bill*) is joined to the Extremity of the *Os Sacrum*. It consists of three or four Bones, of which the lower are less than the upper, till the last ends in a small *Cartilage*; and, turning a little inwards, it sustains the Strait-Gut.

THE *Ossa Innominata*, or *Nameless Bones*, are two large Bones situated on each Side the *Os Sacrum*. In a *Fœtus* they consist of three Parts, which in *Adults* unite, and make but one Bone. The superior Part of which is call'd the *Os Ilium* (vulgarly the *Hip-Bone*) its Figure is nearly Semi-circular, a little convex without, and concave within, and is considerably larger in *Women* than in *Men*, for the sake of Child-bearing. *Of the Os Ilium.*

THE second Part is call'd the *Os Pubis*, *Of the Os Pubis.* and is that which turns over before, and uniting with its Fellow of the other Side by an intervening *Cartilage*, forms the Fore-part of the *Pelvis* or *Basin*, of which the *Os Sacrum* is the Back-part, and the *Iliac* *The Pelvis, or Basin.* the Sides. In the Cavity of this Basin are contained the Bladder, Womb, and Intestines.

THE third and last Part is call'd the *Os Ischium*, or *Coxendix*; it has a large Cavity *Of the Os Ischium, or the Coxendix.* call'd

call'd *Acetabulum Coxendicis*, which receives the Head of the Thigh-Bone; it has a large *Foramen*, or Hole; and at its lower End a large Protuberance, upon which we sit, and from whence the Muscles which bend the Leg arise.

Of the Ribs.

Their Number.

*Two Kinds,
true and false
Ribs.*

*The Thorax
what.*

*Of the Os Ster-
num, or Breast-
Bone.*

FROM the *Pelvis* we re-ascend to the *Chest* of the *Skeleton*, which is made by the Curvature of the *Ribs*. The *Ribs* are twenty-four in Number, twelve on each Side, articulated to the twelve *Vertebræ* of the Back; they are nearly circular, and grow flat and broad as they approach forwards to the *Os Sternum*, or *Breast-Bone*, into which most of them are inserted by a cartilaginous Extremity, and in an oblique Manner. The *Ribs* have each a small Canal or *Sinus* on their under Sides, in which lie a *Nerve*, *Vein*, and *Artery*. Those *Ribs* (*viz.* the seven upper ones) which are fasten'd to the *Sternum*, are call'd *Costæ Veræ*, or *True Ribs*; the other five are call'd *Falsæ*, or *Spurious Ribs*; because they are shorter and softer, and have their cartilaginous Ends annexed to each other below, thereby leaving greater Space for the Dilatation of the *Stomach* and *Entrails*. This *Cavity* of the *Breast* is call'd the *Thorax*.

THE *Sternum*, or *Breast-Bone*, is situated in the Middle of the *Breast*; it is composed of seven or eight *Bones* in *Infants*, which at first are cartilaginous, but ossify and unite into three *Bones* after the seventh Year of Age;

Age; the Substance of which is somewhat *spongy*. The upper Bone receives the Heads of the *Claviculæ*, or *Collar-Bones*; along the Sides of the second, are inserted the gristly Ends of the Ribs; the last or lowest Bone receives the Extremities of the last *true Ribs*, and terminates in a *Cartilage* call'd *Xiphoides*, or *Ensiformis*, from its Resemblance of a Sword, though little. It is broad, hard, and pretty thick; and serves as a *Breast-Plate of Defence* to the Heart, and to sustain the Ribs. *Cartilago Ensiformis.*

THE *Claviculæ*, or *Chanel-Bones*, are two; situated at the Basis of the Neck, above the Breast, one on each Side; they are pretty long, and small; their Substance somewhat spongy; they are articulated to the *Sternum* at one End, and to the Production of the *Scapula*, call'd *Acromion*, at the other; and their Use is to sustain the *Scapulæ*, and to keep them at a due Distance from the *Sternum*. *Of the Claviculæ, or Chanel Bones.*

THE *Scapulæ*, or *Shoulder-Blades*, are two large and broad Bones, in Form of a scalenous Triangle, situated on the upper and back Part of the *Thorax*. Their Substance is thin, but solid and firm; somewhat convex on the Outside, and concave on the Inside; its Use is to receive the Extremities of the *Claviculæ* and *Humerus*, the first in that Process call'd the *Acromion*, the latter in that call'd the *Cervix*; the *Scapulæ* also *Of the Scapulæ, or Shoulder Blades.*

give rise to various Muscles which move the Arm.

*Of the Bones
of the Arm
and Hand.*

*The Humerus,
or Shoulder-
Bone.*

The Elbow.

The Cubit.

The Ulna.

The Radius.

THE Bones of the *Arm* and *Hand* are as follow: (1.) The *Humerus*, or *Shoulder-Bone*, which is long and round; its Substance pretty solid and compact; it has a considerable Cavity containing the *Marrow*. At its upper End it has a round Head, which is receiv'd into the Cavity of the Neck of the *Scapula*; the lower End is thinner and broader than the other, and hath two Pro-tuberances, which make an Articulation (call'd the *Elbow*) with the two Bones of the lower Part of the Arm, which is call'd the *Cubitus*. These Bones are, (2.) The *Ulna*, or *Ell*; and, (3.) *Radius*, or *Spoke-like Bone*; they reach from the *Elbow* to the *Wrist*. The *Ulna* is a long hard Bone, with a Cavity in the Middle; it is biggest at the upper End, and grows less to the lower End. It lies on the Inside of the *Arm*, if the *Palm* be turn'd upwards, and stays the fore Arm or *Cubit*, when it comes strait with the *Arm*. The *Radius* is the outer Bone of the *Cubit*, of a roundish Form, but an uneven Bigness, being bigger near its lower End than its upper. And though the *Ulna* and *Radius* accompany one another, yet they touch not but at their Ex-tremities. The *Humerus* is principally articulated to the upper End of the *Ulna*, but on the lower End of the *Radius*, the Hand is articulated; which is the Reason why those

those Bones are alternately biggest in those Parts. (4.) The *Carpus*, or *Wrist*, consists

The Carpus, or Wrist.

of eight little Bones, of a different Figure and Bigness. They are placed in two Ranks, and are strongly tied together by the *Radial Ligaments*, and particularly by the *Annular Ligament*, through which the Tendons which move the Fingers pass. (5.) The

The Metacarpus.

Metacarpus, or *Back of the Hand*, is made up of five Bones, including that belonging to the *Thumb*, which answer to the *Fingers*; they are round, long, but somewhat concave and plain towards the Palm of the Hand; they are hollow, and contain Marrow, and touch only at the Extremities; they receive the Bones of the *Wrist*, and are receiv'd by

(6.) The Bones of the Fingers and Thumb, which are in Number fourteen in each Hand, viz. three to each Finger, and two to each Thumb. They are a little convex and round towards the Back of the Hand, and hollow and plain beneath, except the last, on which the Nails are. The Order in which they are dispos'd, is call'd the *first*, *second*, and *third Phalanx*; the first is longer than the second, and that than the third. Besides

The Bones of the Fingers.

these, there are, (7.) The *Ossa Sesamoidea*, or small Bones, the Grains of *Sesamum*; they are reckon'd about twelve in each Hand, and are placed at the Joints of the Fingers, under the Tendons, to which they serve as so many Pulleys.

And their Order, or Phalanges.

The Ossa Sesamoidea.

THE

*The Bones of
the Thigh.*

*The Thigh-
Bone.*

The Knee.

*The Patella, or
Knee-Pan.*

Its Use.

The Tibia.

*The Perone, or
Fibula.*

THE Bones of the *Thigh, Leg, and Feet*, are like to those in the *Arm, Cubit, and Hands*, both in Figure and Number. They are as follow: (1.) The *Thigh* hath only one Bone, the longest in the Body; its Fibres are close and hard; it has a *Cavity* in the Middle; is roundish, and bends a little outward. At its *upper End* it is articulated into the Cavity of the *Coxendix*, by a Neck which makes an Angle with the Bone inwards, by which Means the Thighs and Feet are kept at a necessary Distance, and we stand much firmer, the *Line of Propension* playing in a larger Space. At its lower End it is articulated with the Bone of the Leg, by two Heads or Protuberances. This Articulation makes the *Knee*, in which there is, (2.) The little Bone call'd *Patella*, or *Knee-Pan*, which is of a round and flattish Form; soft in *Children*, but hard in *Adults*; a little convex on both Sides. Over it pass the Tendons of Muscles which bend the Leg, whose Motion (like a Pulley) it facilitates, by removing their Direction farther from the Center of Motion. (3.) In the Leg are two Bones, the inner and biggest is call'd *Tibia*; 'tis hard and firm, with a Cavity in the Middle; its fore and sharp Part is called the *Shin*. The outer and lesser Bone is call'd, (4.) The *Perone*, or *Fibula*; and though it be smaller than the *Tibia*, yet 'tis as long; it lies on the Outside of the Leg, and touches not the *Tibia* but at the
Extre-

Extremities, where it is articulated thereto ; the Process at the lower End of the *Fibula* makes the *outer Ankle*, as that of the *Tibia* makes the *inner Ankle*. (5.) The Bones of the *Tarsus*, or *Instep*, are seven ; the *Talus* or *Astragalus*, the *Os Calcis* or *Heel-Bone*, the *Os Naviculare*, the three *Ossa Cuneiformia* or *Wedge-like Bones*, and the *Os Cubiforme* or *Cube-like Bone* : All which are wonderfully contrived and adapted for proper Motion and Walking. (6.) The *Metatarsus*, or *upper continued Part of the Foot*, has five Bones, all like those of the *Metacarpus*, and are articulated into (7.) The Bones of the *Toes*, which are in all fourteen, the Great Toe having two, the rest three a-piece ; they are like the Bones of the *Fingers*, only shorter. In the *Toes* also are sometimes found twelve *Ossa Sesamoidea*.

The Ankles.

Bones of the Tarsus, or Instep.

Of the Metatarsus, or Foot.

Of the Toes.

SYNOSTEOLOGY, or **SYNOSTEOGRAPHY**, the third and last great Part of *Osteology*, treateth of the Parts of a Bone, and the several Kinds of Articulation. In particular Bones then we observe the following Things : (1.) That some are *hollow*, and contain an oleaginous Substance, call'd *Marrow*, whose Use is to supple the Fibres of the Bone, that they break not through Dryness. (2.) On the external Surface of Bones are several *Cavities* at the Extremities, for Articulation ; these are of two sorts ; the first are narrow and shallow, and call'd *Glene*. Tho other sort are wide and deep, and

Of Synosteology, or Synosteo-graphy.

Of the Marrow of Bones, and its Use.

Of the Cavities, Glene and Cotyle.

The Prominences, Apophysis and Epiphysis.

and are call'd *Cotyle*. (3.) The Prominences, or Protuberancies of the Bones, are also of two sorts, viz. *Apophysis* and *Epiphysis*. The *Apophysis* is a *Process* made by the Fibres of the Bone; an *Epiphysis* is a Protuberance made by a small Bone set upon the Extremity of a bigger Bone, which at length unite into one. (4.) The Body of Bones (except the *Teeth*) are all cover'd with a thin, but close and strong Membrane, call'd *Periosteum*, which has an exquisite Sense, and serves to sustain the Vessels which enter the Bones with their Nourishment. (5.) The Processes of Bones on their Extremities are lined with a *cartilaginous* Coat, which is white, smooth and senseless, that they might move easily on the Junctures, and without Pain.

The Periosteum, and its Use.

The cartilaginous Lining of the Processes.

Of the three-fold Articulation of the Bones.

THE *Articulation* or *Juncture* of the Bones is of three several Kinds, viz. (1.) *Diarthrosis*, which is with manifest Motion. (2.) *Synchondrosis*, which is by means of a *Cartilage*, and with a small and obscure Motion. (3.) *Synarthrosis*, which is without any Motion at all.

Diarthrosis twofold, viz. Arthrodia, or Enarthrosis.

OF the *Diarthrosis* there are two sorts, viz. (1.) *Enarthrosis*, or *Arthrodia*; when a round Head of one Bone is receiv'd into the round Cavity of another, or by Ball and Socket; such is that of the *Femur*, or the *Thigh Bone*, and the *Ischium*. By this Juncture the Parts move equally to any Side. (2.) *Ginglymus*, which is when a Bone receives another,

And Ginglymus.

another, and is at the same time received by that other; the Property whereof is to admit only of *Flexion* and *Extension*, as in the *Elbow* and *Knee*.

SYNCHONDROSIS (as was said) is *Synchondrosis*. when the Extremities of two Bones are joined together by means of an intervening Cartilage. Thus the Bodies of the *Vertebrae*, and the Extremities of the Ribs and *Sternum* are articulated, where tho' the Motion of all is manifest, yet that of any two is hardly discernible.

SYNARTHROSIS is threefold; (1.) *Suture*, which is when two Bones are mutually *indented* in one another, in manner of a *Seam*: Thus the Bones of the Scull are joined by the *Sutura Coronalis*, *Sagittalis*, *Lambdoidalis*, &c. (2.) *Gomphosis*; this is when one Bone is fastened into another, like a Nail in a Piece of Wood. Thus the *Teeth* are articulated in the Jaw Bones. (3.) *Schindylefis*, which is when a Bone, by a long and narrow Chanel, receives a small Process or Edge of another Bone; as the *Vomer* is articulated into the *Os Sphaenoides* and *Septum Narium*.

THE *NAILS*, tho' not *Bones*, yet approach nearer the Nature of *Bones* than *Flesh*, and are similar to *Hoofs* in Beasts, and *Talons* in Birds: They are of a peculiar Nature, and seem to grow from a *viscous Matter*, which by the Air hardens into a sort of *horny Substance*, appointed by Nature to defend the

E

Tops

Synarthrosis of three Kinds.

Suture.

Gomphosis.

Schindylefis.

Of the Nails.

Their Use.

Tops of the *Fingers* and *Toes*, and for several other Uses well known.

The Number of the Bones.

The general Uses of the Bones.

THE Number of *Bones* in the *human Skeleton* are 245, besides the *Ossa Sesamoidea*, which are said to be 48. The Use of the *Bones* is, (1.) For *Firmitude* and *Sustentation* of the *Body*, like *Beams* and *Pillars* in *Houses*. (2.) For *Defence* of *Parts*; thus the *Scull* defends the *Brain*, the *Ribs* the *Entrails* of the *Thorax*, &c. (3.) For *Progession* and *Walking*, of which they and the *Muscles* are only *Instruments*. (4.) For *Shape*, *Size*, and *Beauty* of the several *Parts*, and of the whole *Body*; besides infinite special Uses of particular *Bones*.

An Introduction to the Second Part, Sarcology.

HAVING dispatch'd the *first*, we come now to the *second Great Part* of *Anatomy*, viz. *SARCOLOGY*; which, as I said, is subdivided into *Myology*, *Splanchnology*, and *Angiology*. But for a proper Introduction hereto, I shall premise, (1.) The *Anatomical Division* of the *Body* into *Upper*, *Middle*, and *Lower Cavity*. (2.) The Doctrine of the common *Integuments* and *Membranes* of the *Body*, under the Title of *Membranology*.

The Body divided into

The Head,

The Thorax,

The Abdomen.

THE *Trunk* of the *human Body* is, by *Anatomists*, divided into three *Cavities* or *Regions*, viz. (1.) The *Upper*, which is the *Head*. (2.) The *Middle*, which is the *Chest* or *Thorax*, containing all from the *Neck* to the *Midriff* or *Diaphragm*. (3.) The *Lower Cavity*, or *Abdomen*, commonly call'd the *Belly*.

Belly. And according to this Division we shall proceed in future Descriptions of the Contents and Appurtenances of each.

MEMBRANOLOGY treats of the various *Membranes, Coats, and Coverings* of the Body in general, and the Parts in particular. The common Parts or Teguments are as follow. (1.) The *Epidermis, Cuticula*, or Scarff-Skin; this is the outmost Covering of the Body, and is that thin *Pellicle* which rises in Blistering; it lies on the true *Skin*, and closely adheres thereto; it seems to be made up of several Lays of exceeding small *Scales*, lying partly on one another. Under one of those *cuticular Scales* there are reckon'd 500 *Orifices* of excretory Channels for *Per-*piration; and that one Grain of Sand will cover 250 of those *Scales*, and therefore will cover 125000 of those *Orifices* thro' which we perspire. The Use of it is to defend the Extremities of the Nerves from all external Injuries. (2.) The *Cutis, or Skin*; in which we observe three Things: First, an infinite Number of *Papillæ Pyramidales*, which are the Ends of all the Nerves of the Skin rising in a *Pyramidal Figure*; between these are an infinite Number of Holes, which are the *Orifices* of the *Excretory Vessels* of the *Miliary Glands* beneath. Secondly, a Web of nervous Fibres and other Vessels differently interwoven, which makes the *Parenchyma*, or Substance of the Skin. The third Part is an infinite Number of *Miliary Glands*, which

Of Membrano-
nology.

The Epidermis,
Cuticula, or
Scarff-Skin.

Its Contexture
of Scales, &c.

The Cutis, or
true Skin.

The Papillæ
Pyramidales.

The Paren-
chyma of the
Skin.

The Miliary
Glands.

lie under the other two Parts, and separate the Matter of *Sweat* and insensible Perspiration. The Use of the Skin is a general Covering of the Body, and to be the Seat of the Organs of the general Sense of *Feeling*; and of the *Emunctories* of *Perspiration*, thro' which we perspire daily near 50 Ounces of Matter. (3.) The *Hair* may be reckon'd among the Teguments of the Body. They have each a round bulbous Root which lies deep in the Skin, which draw Nourishment from the surrounding Humours; according to the different Qualities of which, the Hair has different Colours. Their Use is for a Covering and Ornament to the Body. (4.) Beneath the Skin lies the *Membrum Adiposum*, or Membrane of *Fat*. It consists of infinite Numbers of Vesicles or little Bladders, in which is deposited the oily and sulphureous Part of the Blood, which in those membranous Cells we call the *Fat*. There are two Sorts of *Fat*, one yellowish, soft, and lax, call'd *Pinguedo*; the other white, firm, brittle, and not easily melted, call'd *Sevum*, Suet, or Tallow. The chief Use of the *Fat* is to blunt and sweeten the Acrimony of the Salts of the Blood, and to moisten and supple the Parts for easy Motion. (5.) The *Membrana Carnosa* is only a Part of the last Membrane, which in some Places appears reddish and fleshy; for the the Blood-Vessels there lie very thick, the Vesicles not being distended with *Fat*. These are

The Use of the Skin.

Of the Hair.

The Membrum Adiposum.

The Fat, what.

Two Sorts;

Pinguedo, and *Sevum*, or Suet.

The Membrana Carnosa.

are the general Coats or Coverings of the Body.

THE *Membranes* which cover and wrap up particular Parts are various, as (1.) The *Meninges*, or *Dura* and *Pia Mater*, which embrace the *Brain* and its Parts. (2.) The *Pleura*, which lines the *Thorax*. (3.) The *Peritonæum*, which wraps up all the Contents of the *Abdomen*. (4.) The *Pericardium*, which contains the *Heart*. (5.) The *Perio-* *Periosteum*, &c. *Perio-* *Periosteum*, which environs the *Bones*. (6.) The *Membrana propria Musculorum*, or that which wraps up all the *Fibres* of a *Muscle*. And (7.) Another *Vascular Membrane* which accompanies all the *Vessels* of the *Body*. Those which make the *Tubes* and *Pipes* of *Vessels* and the *Viscera*, as the *Veins*, *Arteries*, *Stomach*, *Bladder*, *Intestines*, *Testicles*, &c. are call'd *Tunics* or *Coats*. The *Membranes* receive *Veins*, *Arteries*, and *Nerves* from the *Parts* which are nearest to them.

MYOLOGY, or the Doctrine of the *Muscles*, being the first general Part of *Sarcology*, comes now to be considered. A *Muscle* is a Bundle of fleshy and often tendinous *Fibres*, of which all in the same Plane are nearly parallel to one another, and they are all enclosed by one proper *Membrane*.

THE fleshy *Fibres* compose that Part which is call'd the *Body* or *Belly* of the *Muscle*; they are red, lax, and spongy, containing a Number of small *Cavities*, and are tied together

gether by a Number of small short Threads, which go from Fibre to Fibre, call'd *membranous Fibres*.

The Head and Tail thereof.

THE *tendinous Fibres* compose the two *Extremities*, call'd the *Head* and *Tail*, or the two *Tendons* of the Muscle. They are *white*, *hard*, and *compact*, and closely bound together, which makes them less than the *Body* of the Muscles. These *tendinous Fibres* seem to be nothing but the Continuation of the *fleshy Fibres* divested of their *Carnosity* or *fleshy Substance*.

Their Vessels.

EACH Muscle, and every Fibre of a Muscle, has *Nerves*, *Veins*, and *Arteries*; either of which, being tied, deprives the Muscle of the Power of contracting; but the *Stoppage* being remov'd, they again contract, and contracting swell: So that the *Action of Muscles* is perform'd by the *Rarefaction* of the *Blood* and *Spirits* distending the *Cavities* of the *Fibres*.

The Action of Muscles, whence.

The Division of Muscles into simple and compound.

THE Muscles are either *simple* or *compound*; the *simple* have all their Fibres parallel, and in the same Direction. The *compound Muscles* have the *fleshy Fibres* of several *Planes* crossing one another, or of *different Directions*; and they may be divided into as many *simple Muscles* as there are *Planes*, whose Fibres have different Directions. The *Strength* of a Muscle consists in the *Number of its Fibres*. As to the Form or Figure of Muscles, some are *long* and *round*, some *plain* and *circular*, some *broad* and *rhomboidal*;

The Form of the Muscles.

dal;

dal; others have Fibres which divaricate, and from a *broad* or *circular* Beginning converge into a *small Tendon*; some are double, consisting of a Tendon running thro' their Bodies from *Head* to *Tail*; some are *square*, some *annular*; some *Muscles* have two or three Tendons at one End, and these are call'd *Biceps*, *Triceps*, &c. Sometimes one Muscle has *two Bodies*, which is call'd *Biventer*, or *Digastric*: Sometimes several Muscles join in *one Tendon*, as the *Tendo Achillis*, at the Heel; with much more Variety of this sort.

THE Use of *Muscles* is twofold. (1.) They constitute the *fleshy Part* of the Body, and give it that *beautiful Form* and *superficial Variety* we observe in every Part. (2.) But they principally serve for *animal Motion*; for by their means all the Parts of the Body are moved; which is thus accounted for: The *Cavities* of the *muscular Fibres* (as was said) being distended and swoln with *Blood* and *Spirits* rarefied therein, they must necessarily contract and become short; and therefore the Bone or Part into which the *Muscle* is inserted, will, by this Contraction of the *Muscle*, be *drawn* or *pull'd* toward the Part whence the said *Muscle* arises: And this, in short, is the *general Theory* of *animal* or *muscular Motion*. But by what means the *Action* of the *Muscles*, or the *Motion* of the *Parts*, is the *Subject* of the *Will*, and answers instantly to the *quickest Thought*, of the *Mind*,
I have

*The Use of the
Muscles, and
Theory of Ani-
mal Motion.*

I have found no Mortal yet wise enough to teach.

INSTEAD of a dry and tedious Account of the *Muscles*, I judge it will be sufficient to exhibit a Table of their Names and Uses, as drawn up by the accurate Pen of the late ingenious Doctor *Keill*, and which is as follows.

<i>Muscles of the Head 2 Pair.</i> <i>Of the Ears 6 Pair.</i>	Frontales	— — —	Pull the Skin of the Forehead up.
	Occipitales	— — —	Pull the Skin of the Hindhead up.
	Attollens	} Auricularum	Lifts up the Ear.
	Deprimens		Pulls down the Ear.
	Internus	} Malleoli —	Distends the Tympanum.
	Externus		Relaxes it.
<i>Of the Eye-brows 1.</i> <i>Of the Eye-lids 2.</i> <i>Of the Eyes 6.</i>	Obliquus		
	Musculus Stapedis	— — —	Moves the Stirrop-Bone.
	Corrugator Supercilii	— — —	Knits the Eye-brows.
	Rectus Palpeb. super.	— — —	Lifts up the Upper Eye-lids.
	Orbicularis Palpebrarum	— — —	Shuts both Eye-lids.
	Attollens	} Oculorum	Draws the Eyes upwards.
<i>Nose 3 Pair.</i>	Deprimens		Pulls them downwards.
	Adductor		Brings them to the Nose.
	Abductor	} —	Draws them from the Nose.
	Obliquus Major		Pulls the Eye forw. & ob. downw.
	Minor	— — —	Pulls the Eye forw. & ob. upwards
	Attollens	} Nares —	Lifts up the Nose.
<i>Of the Lips 6 Pair, and one single one.</i>	Deprimens		Compresses the Nostrils.
	Dilatans		Distends them.
	Incisivus	— — — — —	Pulls the upper Lip upwards.
	Triangularis	— — — — —	Pulls it downwards.
	Caninus	} —	Pull the lower Lip upwards.
	Elevator Labii sup.		
<i>Cheeks 1 Pair.</i> <i>Lower Jaw, 6 Pair.</i>	Quadratus	— — — — —	Pulls it downwards.
	Zygomaticus	— — — — —	Draws both ob. to either Side.
	Orbicularis	— — — — —	Draws both Lips together.
	Buccinator	— — — — —	Thrusts the Meat betw. our Teeth.
	Temporalis	} — — — — —	They pull the Jaw upwards.
	Masseter		
	Pterigoidæus Internus	— — — — —	Draws the Jaw to either Side.
	Externus	— — — — —	Draws the Jaw forwards.
	Quadratus	— — — — —	Pulls the Jaw & Cheeks downw.
	Digastricus	— — — — —	Pulls the Jaw downwards.

Peri-

<i>Uvula</i> , 2 Pair.	<i>Peristaphylinus Internus</i> — — — — —	Pulls the <i>Uvula</i> forwards.
	<i>Externus</i> — — — — —	Pulls the same backwards.
<i>Tongue</i> , 3 Pair.	<i>Styloglossus</i> — — — — —	Draws the Tongue upwards.
	<i>Genioglossus</i> — — — — —	Pulls it out of the Mouth.
	<i>Ceratoglossus</i> — — — — —	Pulls it into the Mouth.
<i>Os Hyoides</i> , 5 Pair.	<i>Geniohyoidæus</i> — — — — —	{ Pulls the <i>Os Hyoides</i> and Tongue upwards and forwards.
	<i>Sternohyoidæus</i> — — — — —	
	<i>Mylohyoidæus</i> — — — — —	Pulls it obliquely upwards.
	<i>Coracohyoidæus</i> — — — — —	Pulls it obliquely downwards.
	<i>Stylohyoidæus</i> — — — — —	Elevates it to either side.
<i>Of the Pharynx</i> , 2 Pair.	<i>Stylopharyngæus</i> — — — — —	Pulls up and dilates the <i>Pharynx</i> .
	<i>Oesophagæus</i> — — — — —	Straitens the <i>Pharynx</i> .
	<i>Sternothyroidæus</i> — — — — —	Pulls the <i>Thyroides</i> downwards.
	<i>Hyothyroidæus</i> — — — — —	Pulls the <i>Thyroides</i> upwards.
	<i>Cricothyroidæus</i> — — — — —	Moves the <i>Thyroides</i> forwards.
	<i>Cricoaarytænoideus</i> Post. — — — — —	{ Draw the Cartilages obliquely sideways.
	<i>Later.</i> — — — — —	
<i>Head</i> , 10 Pair	<i>Thyroarytænoideus</i> — — — — —	Dilates the <i>Glottis</i> .
	<i>Arytænoideus</i> — — — — —	Contracts the <i>Glottis</i> .
	<i>Splenius</i> — — — — —	{ Move the Head backwards.
	<i>Complexus</i> — — — — —	
	<i>Rectus Major</i> — — — — —	{ Nod the Head backwards.
	<i>Minor</i> — — — — —	
	<i>Obliquus Infer.</i> — — — — —	{ Turn the Head about.
	<i>Super.</i> — — — — —	
	<i>Rectus Intern. Major</i> — — — — —	{ Nod the Head forwards.
	<i>Minor</i> — — — — —	
<i>Of the Thorax</i> , 29 Pair.	<i>Rectus Lateralis</i> — — — — —	Nods the Head to one Side.
	<i>Intercostales Interni</i> — — — — —	{ They pull the Ribs upwards in Inspiration.
	<i>Externi</i> — — — — —	
	<i>Subclavius</i> — — — — —	
	<i>Serratus Anticus Major</i> — — — — —	
	<i>Posticus Super.</i> — — — — —	{ They quicken the Motion of the Ribs downwards in Expiration.
	<i>Triangularis</i> — — — — —	
<i>Of the Abdomen</i> , 5 Pair.	<i>Serratus Post. Inferior</i> — — — — —	
	<i>Sacrolumbaris</i> — — — — —	{ Assists in Inspirat. & Expiration.
	<i>Diaphragma</i> — — — — —	
	<i>Obliquus Externus</i> — — — — —	{ They compress all the Parts in the Lower Belly, assist the Motion of the Ribs downwards in Expiration; and help to bend the <i>Vertebrae</i> of the Loins forw.
	<i>Internus</i> — — — — —	
	<i>Transversalis</i> — — — — —	
	<i>Rectus</i> — — — — —	
<i>Vertebrae</i> , 7 Pair.	<i>Pyramidalis</i> — — — — —	{ Keeps the Body erect.
	<i>Longissimus Dorsi</i> — — — — —	
	<i>Transversalis Dorsi</i> — — — — —	Moves the Body ob. backwards.
<i>Peri-</i>	<i>Interspinalis</i> — — — — —	{ Brings the acute Processes nearer together.
	<i>F</i> — — — — —	

Quadratus

	Quadratus Lumborum	—	{	Draws the <i>Vertebra</i> of the Loins to one Side.	
	Longus	{	— — — — —	Bend the <i>Vertebra</i> of the Neck.	
	Scalenus				
	Psoas Parvus	—	—	Helps bend the <i>Vert.</i> of the Loins.	
Male Privities	Cremaster	—	—	Draws up the <i>Testes</i> in Coition.	
4 Pair.	Erectores	{	Penis	{ Erect the <i>Penis</i> .	
	Transversalis				
	Acceleratores Urinæ	—	—	Assist the Expulsion of Urine, &c.	
Clitoris 1 Pair	Erectores Clitoridis	—	—	Erect the <i>Clitoris</i> .	
Bladder, a	Sphincter Vesicæ	—	—	Contracts the Neck of the Bladd.	
single one.	Levatores Ani	—	—	Draw up the <i>Anus</i> .	
Anus, 3 single ones.	Sphincter Ani	—	—	Closes the <i>Anus</i> .	
	Serratus Anticus Min.	—	—	Draws the Should. Blade forw.	
Shoulder-Blades,	Trapezius	—	—	{ Moves it upwards, backwards, and downwards.	
4 Pair.	Rhomboides	—	—	Pulls it backwards.	
	Levator Scapulæ	—	—	Pulls the Should. Blade upwards.	
Arm-Bones,	Deltoides	—	—	{ Lift the Arm upwards.	
9 Pair.	Supra-spinatus	—	—		
	Coracobrachialis	—	—		
	Teres Major	—	—	{ Pull the Arm downwards.	
	Latissimus Dorsi	—	—		
	Pectoralis	—	—	Moves the Arm forwards.	
	Infra-spinatus	—	—	{ Draw the Arm backwards.	
	Transversalis	—	—		
	Subscapularis	—	—		
	Biceps	—	—	{ Bend the Fore-Arm.	
Of the Cubits,	Brachizæus Inter.	—	—		
6 Pair.	Longus	—	—	{ Extend the Fore-Arm.	
	Brevis	—	—		
	Brachizæus Exter.	—	—		
	Anconæus	—	—	{ They turn the Palm of the Hand downwards.	
	Rotundus	{	— — — — —		
	Quadratus				
	Longus	{	— — — — —		
	Brevis				
Of the Wrists,	Cubitæus Inter.	—	—	{ Bend the Wrist.	
4 Pair.	Radizæus Inter.	—	—		
	Cubitæus Exter.	—	—	{ Extend the Wrist.	
	Radizæus Exter.	—	—		
Palms, 2 Pair.	Palmaris	—	—	Helps to clutch the Hand.	
	Brevis	—	—	Makes the Palm hollow.	
Of the Fingers,	Sublimis	{	— — — — —	Bend the Fingers.	
15 Pair.	Profundus				
	Extensor Digitor. Com.	—	—	Extends the Fingers.	
	Lumbricales	—	—	Assist in bending their first Joint.	

Interossei

Interossei

Thumbs, 7 Pair.	Interossei Interni — — —	Draw the Fingers to the Thumb.	
	Interossei Externi — — —	Draw them from the Thumb.	
	Flexor Pollicis Long. —	} Bend the Thumb.	
	———— Brev. —		
	Extensor primi	} Inter- nodii	} Extends the first, second, and third Joint of the Thumb.
	———— secundi		
	———— tertii		
	Tenar — — — — —	Draws the Thumb from Fingers.	
	Antitenar — — — — —	Draws it to the Fingers.	
Fore-fingers, 2 Pair.	Abductor Indicis — — — — —	Draws the Fore-fingers fr. the rest	
	Extensor Indicis — — — — —	Extends the Fore-finger.	
Little-fingers, 2 Pair.	Hypotenar — — — — —	Draws the Little Finger fr. rest.	
	Extensor Auricularis — — — — —	Extends the same.	
Of the Thighs, 13 Pair.	Psoas	} — — — — —	Bend the Thigh.
	Iliacus		
	Pectinæus	} — — — — —	Extend the Thigh.
	Glutæus Major		
	———— Medius		
	———— Minor	} — — — — —	Pulls the Thigh inwards.
	Triceps — — — — —		
Of the Legs, 11 Pair.	Pyriformis	} — — — — —	Move the Thigh outwards.
	Gemini		
	Quadratus		
	Obturator Inter.	} — — — — —	Help to move the Thigh ob- liquely and circularly.
	———— Exter.		
	Seminervosus — — — — —	} — — — — —	Bend the Leg.
Semimembranosus — — — — —			
Biceps — — — — —			
	Gracilis — — — — —	} — — — — —	Extend the Leg.
	Vastus Exter.		
	———— Inter.	} — — — — —	Brings the Legs across each other
	Crureus		
	Sartorius — — — — —	Turns the Leg somewhat inwards	
	Popliteus — — — — —	Turns it somewhat outwards.	
	Membranosus — — — — —	} — — — — —	Bend the Foot.
Of the Feet, 8 Pair.	Tibialis Anticus		
	Peronæus Anticus	} — — — — —	Extend the Foot.
	Gastrocnemii		
	Soleus		
	Plantaris	} — — — — —	Moves the Foot inwards.
	Peronæus Posticus — — — — —		
	Tibialis Posticus — — — — —	Moves it outwards.	
Of the Toes, 24 Pair.	Profundus	} — — — — —	Bend the Four Lesser Toes.
	Sublimis		
	Lumbricalis		
	Longus	} — — — — —	Extend them.
Brevis			

ANATOMY *epitomiz'd.*

Extensor Pollicis — — —	Extends the Great Toe.
Tenar — — — — —	Draws it from the rest.
Antitenar — — — — —	Draws it to the rest.
Flexor Pollicis Long. —	} Bend the Great Toe.
————— Brev. —	
Abductor Minim. Digit. —	Draws the L. Toe out fr. the rest
Interossei Interni — — —	Draw the Toes to the Gr. Toe.
————— Externi — — —	Draw them from the Gr. Toe.
Transversalis — — — — —	{ Brings all the Toes close to one another.

IN all 446 single Muscles in the Body.

HAVING thus succinctly dispatch'd the Myology, we are led by our Method to treat next of

Of Splanchnology.

SPLANCHNOLOGY, the Second grand Division of *Sarcology*. This Head compriseth the *Viscera*, or Bowels, or rather all the Contents of the *Head*, *Thorax*, and *Abdomen*. I shall therefore begin first with the Parts of the *Head*. The *Brain* is the only considerable *Viscus* of the Head, properly so call'd; it is enclosed within the two Membranes call'd the *Meninges*, viz. the *Dura Mater* and *Pia Mater*; they are call'd *Mater*, i. e. Mother, because supposed to be the Original of all other Membranes of the Body. The *Dura Mater* covers all the Cavity of the *Cranium*, and adheres closely to the Basis thereof. It contains the whole *Brain* somewhat loosely, that the Vessels between its Duplication, and on the Surface of the *Brain*, be not too much press'd by the *Scull*. It gives a Coat to all the Nerves which arise from the *Brain* to the *Spinal Mar-*

The Dura Mater.

row,

row, and all the Nerves proceeding from it. It has several Proceſſes, and *Sinus's* returning the Blood from the *Brain* to the internal *Jugular Veins*.

THE *Pia Mater* is a thin, delicate, double Membrane lying under the *Dura Mater*, and covers immediately the Substance of the Brain. The internal Membrane is much the largest, running in betwixt all the *Foldings* and *Circumvolutions* of the Brain, to separate them and sustain the *Blood-Vessels*, which make several *Turnings* and *Windings* upon it, before they terminate in the Substance of the Brain. *The Pia Mater.*

THE Substance of the Brain is divided into two Parts, (1.) The *Cerebrum*, which lies mostly on the Fore-part of the Scull; and (2.) The *Cerebellum*, which lies in the Back-part, under the Hind-part of the *Cerebrum*. *The Substance of the Brain.*

THE *Cerebrum*, or Fore-part of the Brain, is of an oblong Figure; its external Surface is full of *Circumvolutions* resembling the *Intestines*. The external Substance of the *Cerebrum* is of an Ashy Colour, soft and glandulous, as consisting of an infinite Number of little *Oval Glands*, which receive the Capillary Branches of the Veins and Arteries of the Brain, and which send out an infinite Number of *Fibres*, which all together make the inner, white, firm, fibrous, or medullary Substance of the Brain; and this at the Basis of the Scull, where it goes off the Brain, being *The Cerebrum.*

*The Medulla
Oblongata.*

*Parts of the
Brain.*

*Centrum
Ovale.*

*Corpus Cal-
losum.*

*Crura
Medullæ
Oblongatæ.
Corpora
Striata.*

*Thalami
Nerv. Optic.*

*Plexus Cho-
roides.*

Fornix.

being a Process of an *oblong Form*, is called the *Medulla Oblongata*.

As the internal Substance of the right and left Side of the Brain approach to join each other, they leave a Space which forms *three Ventricles*, or *Centrum Ovale*. The upper Part, or Covering of this Space, is called the *Corpus Callosum*, or *Callous Body*; the Bottom of this Space is the internal Substance of the two Sides of the *Cerebrum*, gathered together, as it were, into two Bundles, which are call'd *Crura Medullæ Oblongatæ*. Upon them are the two Protuberances call'd *Corpora Striata*, or *Streaked Bodies*; which consist of a Mixture and Union of the *medullary Substance* with the *cineritious* or *glandulous*. On the same *Crura* also are found two other Prominences, call'd *Thalami Nerv. Optic.* or *Chambers of the Optic Nerves*, because they arise out of them: They are *medullary* without, and a little *cineritious* within, and of an oblong Figure. Between the two lateral *Ventricles* of the *Brain* is extended the *Plexus Choroides*, or *Net-like Web*, which is made up of *Veins*, *Arteries*, *Lymphatics*, and *little Glands*. In the Middle, above the *Corpora Striata*, and *Thal. Ner. Op.* there lies a thin and broad Production of the *medullary Substance*, which covers the third *Ventricle*, and is therefore call'd the *Fornix*, or *Furnace*. From this third *Ventricle* there is a Hole leading to the *Pituitary Gland*, which is called

called the *Infundibulum*, or *Funnel*, from its *Infundibulum*.
 Form: It is form'd of the *medullary Sub-*
stance; and piercing the *Dura Mater* on the
 Basis of the Scull, enters into the *Glandula* *Glandula*
Pituitaria, which is situated in the Cavity *Pituitaria*.
 call'd the *Sella Turcica*; it is closely cover'd
 with the *Pia* and *Dura Mater*, and is of a
 harder Substance than the other Glands of
 the Body. (This Gland is surrounded by the
Rete Mirabile, or *Wonderful Net*, which *Rete Mirabile*.
 consists of Branches of *Veins* and *Arteries* of
 the Neck. Its Use is to break the *Impetus*,
 and abate the Velocity of the Blood, as it
 passes through the tender Substance of the
 Brain. In the hinder Part of the third *Ven-*
tricle, there is a little Hole call'd the *Anus*,
 which leads into the fourth *Ventricle* in the
Cerebellum: In this Hole, on the upper Part,
 is situated the *Glandula Pinealis*, (which *Glandula*
Descartes supposed was the *Seat or Domicile* *Pinealis*.
of the Soul) about the Bigness of a *Pea*; it
 is composed of the same Substance with the
 rest of the Brain, and for the same Use. It
 is tied by some *Fibres* to the *Nates*, which *Nates*.
 are two Prominences (like *Buttocks*) of the
Medulla Oblongata; behind which are two
 others call'd the *Testes*, both cover'd with a *Testes*.
 Net of Blood-Vessels. There is a small
 transverse *medullary Protuberance* behind the
Testes, from which the *Patbetic Nerves* arise.
 The Part which joins the *Cerebrum* and *Ce-*
rebellum, is called the *Isthmus*, by which we *Isthmus*.
 arrive at the

Cere-

The Cerebellum.

Cerebellum (which is as much as to say a *little Brain*.) This Part is also compos'd of a *cortical* and *medullary Substance*; its Superficies consists of *semicircular Foldings*, which grow less as they approach its fore and hind Part, where they seem to resemble two *Worms*, and are therefore called *Processus Vermiformes*. The medullary Substance of the *Cerebellum* divides into two equal Bundles, which join the two Sides of the *Medulla Oblongata*. Between them is a little Space, on the upper Side of the *Medulla*, call'd the *fourth Ventricle*; and its farther End, being like a *Pen*, is call'd *Calamus Scriptorius*. From under the *Cerebellum*, the *Medulla Oblongata* goes out of the *Scull* into the *Spine*, being contained in the *Pia* and *Dura Mater*, and is there what we call the *Spinal Marrow*.

Processus Vermiformes.

The fourth Ventricle.

The Vessels of the Brain.

THE *Vessels* of the Brain are *Veins* and *Arteries*, and *ten Pair of Nerves* have their Origin immediately from the Brain, which go to the *Eyes*, *Ears*, *Nose*, *Palate*, and other Parts of the Head.

The Use of the Brain.

THE Use of the Brain is to separate from the Blood brought thither, the most fine, spirituous, and noble Part thereof, call'd *Animal Spirits*, by the Glands in the external Part of the Brain, from whence they are receiv'd by the *Fibres* of the *Medullary Substance*, and thence convey'd through the *Nerves* to all the Parts of the Body, imparting the *Faculty of Sensation* to the whole Machine;

Machine; and thus Creatures become *sensitive Animals*. And that Part in the Brain where the *Fibres* which make the Nerves have their Origin, call'd the *Medulla Oblongata*, hath been esteem'd (and thence named) the *Sensorium commune*, or *Common Sensory*, the Seat of the *Mind*, where it receives all its *Ideas* by means of the several *Organs of Sense*. *The common Sensory.*

THE *Organs of Sense* come now to be treated of. The *Organs of Sight* are the first and noblest of all; in them, *viz.* the *Eyes*, we distinguish the *External* and *Internal Parts*. The *External Parts* are, (1.) The *Eye-brows*, which are *Hairs* growing on some *Fat* bunching out in these *Parts*; and serve to break the *Rays of Light*, that they be not directly darted upon, and so offend the Sight. (2.) The *Eye-lids*; the upper moves quickly, the lower very undiscernibly, by proper *Muscles*; they close the *Eyes* as in a Case, and form two *Angles* call'd the *greater* and *lesser Canthus*. (3.) The *Cilia*, which are two small and soft *Cartilages* on the *Edges* of the *Eye-lids*, like *Segments* of a *Circle*; they keep the *Eye-lids* extended, and by certain *Glands* yield a *Wax* to cement them together in *Sleep*. On them grow a *Border* of stiff *Hairs*, which defend the *Eyes* from *Filth*, *Flies*, &c. falling into them. (4.) The *Membrane* of the *Eye-lid* call'd the *Conjunctiva*, because it is continued upon the *Globe* of the *Eye*, and forms what is call'd

G

Of the Organ of Sight, the Eyes.
The Eye-brows.
Eye-lids.
The Cilia.
The Conjunctiva.

*Glandula
Lachrymalis.*

*The Puncta
Lachrymalia.*

*The Coats of
the Eyes.
The Conjunctiva.
Sclerotica.
Cornea.*

Choroides.

Uvea.

call'd the *White of the Eye*; it joins the *Ball* to the *Edges* of the *Orbit*. (5.) The *Glandula Lachrymalis*, or weeping Gland, lies behind the *Conjunctiva* on the Upper-part of the *Ball*; it is pretty large, and its Use is to separate the Matter of the *Tears*, to keep the outer Coat of the Eye constantly moist and supple for Action. (6.) The *Puncta Lachrymalia* are two small *Holes* in the *Great Canthus* or Corner of the Eye, one in each *Eye-lid*; these collect the *Tears* directed hither by the circular Edges of the *Eye-lids*; they lead to a small membranous *Bag* situate on the *Os Lachrymale*, which by a small Pipe discharges the *lachrymal Humour* upon the internal Parts of the *Nostrils*, to moisten the Membrane thereof.

THE Coats of the Eyes are (1.) The *Conjunctiva*, already describ'd. (2.) The *Sclerotica*; 'tis thick, hard and smooth; opaque behind, and transparent before, where it makes (3.) The *Cornea*, so called because transparent on the Fore-part of the Eye like the *Horn* of a *Lanthorn*; it is surrounded by the *White*, and has a greater Convexity than the rest of the *Globe*. It has a most exquisite Sense, in order to excite *Tears*, to wash off any thing that might hinder its *Transparency*. (4.) The *Choroides*; it lies under the *Sclerotica*, and is much thinner than it; this Coat has that circular *Hole* before, which we call *Pupilla* or *Pupil of the Eye*. (5.) The *Uvea*, which is made of circular and strait *Fibres*, which

which

which make the Circumference of the *Pupil*, and hath thereby the Power of *Contracting* and *Dilating*, according as greater or lesser Light is requir'd. The Outside of the *Uvea*, where the *Colours* appear, is call'd the *Iris*; and on the Inside arises the *Ligamentum Ciliare*, which compresses the *Glassy Humour*, and lengthens the *Axis* of *Vision*.

(6.) The *Retina*, of a *Net-like* Contexture, covering the Bottom of the Cavity of the Eye; it is a fine Expansion of the *Medullary Fibres* of the *Optic Nerve* on the *Glassy Humour*. 'Tis on this Coat the *Species* of Objects are painted. *Retina.*

THE *Humours*, which make the Body of the Eye, are three. (1.) The *aqueous* or *watry Humour*; it lies on the *Fore-part* of the *Globe*, under the *Cornea*; it is thin and liquid, and of a spirituous Nature, for it freezes not in the greatest Frost. If the *Cornea* be prick'd, and this Humour be squeez'd out, it will be supplied again in 10 or 12 Hours. (2.) The *Chrystaline Humour* lies next the *Aqueous*, behind the *Uvea*, opposite to the *Pupil*. It is the *least*, but the most *solid* of the *Humours*; it is convex on both Sides, resembling a double *Convex Lens* both in *Figure* and *Use*, which is to receive and converge the Rays to a proper *Focus* on the *Retina*. It is cover'd with a fine Coat call'd the *Aranea*. (3.) The *Glassy* or *Vitreous Humour*; it has a great *Likeness* to the *White* of an Egg; it fills all the Hind- *The Humours of the Eye.*
The Aqueous Humour.

The Chrystaline.

The Vitreous or Glassy Humour.

part of the Cavity of the Globe, and is much the largest in Quantity ; it is cover'd with a fine Coat, and gives the *Spherical Figure* to the Eye. On its Back-part the *Retina* is spread, which it keeps at a due *focal Distance* from the *Chrystaline Lens*.

*Vision what,
and how per-
formed.*

Vision, (the Effect of the wonderful Machinery of the Eyes) is thus perform'd. All the Rays which come from one Point of an Object are by the *Cornea* and *Humours* of the Eye united in a Point on the *Retina*, and thus all Rays which come from all Points of an Object are united there in the same Proportion as in the-Object, but in an inverse Order, and therefore the *Species* or Impressions of these Points on the *Retina* must together make the *Image* of the Object, and which by the *Optic Nerve* being communicated to the *Common Sensory* of the Brain, makes there the *Idea* in the Mind. After this Manner we conceive of *Forms* and *Qualities* of natural Bodies.

*The Organ of
Hearing, viz.
The Ear.*

*The external
Ear.*

*The Pinna,
and Fibra,
or Lobe.*

THE next considerable Organ of Sensation is that of *Hearing*, viz. the *Ear*. It is divided into the *External* and *Internal*. The *External Ear* consists of two Parts ; of which the upper is call'd *Pinna*, or the *Wing*; the lower *Fibra*, or the *Lobe*. The Parts of the *Pinna* are the *Helix*, or outer Border of the Ear ; the *Anti-helix*, which is the Semicircle within the other ; the *Protuberance* at the lower End of which is call'd the *Anti-tragus*, because of another Pro-
minence

minence opposite to it call'd the *Tragus*. The Cavity form'd by these Parts is call'd the *Concha*: The Hollow in the middle of the Ear is call'd *Alvearium*, from which goes the *Meatus Auditorius* to the *Tympanum*, or Drum of the Ear. The Use of the external Ear is, like a *Funnel*, to gather the Sounds, and direct them through the *Auditory Passage*, to make their *Vibrations* on the *Tympany*.

THE internal Ear begins with the *Meatus Auditorius*, which is about an Inch long, and one Tenth of an Inch wide; is not

The internal Ear.
The Meatus Auditorius.

strait, but a little winding; it is lined with a Membrane, behind which are little Glands which yield a yellow Excrement, call'd *Ear-Wax*, whose *Bitterness* and *Viscidities* hinder *Insects* from approaching the *Tympany*. The inner Extremity of the *Meatus* is closed with

a thin transparent Membrane, of an oval Figure, stretch'd out like the Head of a Drum. Its Site is a little oblique to the

Head of the Drum.

Sides of the *Meatus*, and is set in a bony Circle of the *Temporal Bone*. Behind this Membrane there is a pretty large Cavity

call'd the *Tympanum*, or Drum of the Ear; in this Cavity are four small Bones. (1.) The

The Tympanum or Drum.

first is call'd *Malleolus*, or the *Hammer*, from its Shape; its *Handle* is fasten'd to the Membrane of the *Tympany*, and in its Head is a

Malleolus.

Cavity, whereby it is joined to (2.) The *Incus*, or *Anvil*; it has a *Head*, and two

Incus.

Legs, the longest of which is tied to the

Head—

Stapes.

Head of (3.) The *Stapes*, or *Stirrop-like Bone*; it is of a triangular Figure, being made of two Branches set upon a flat *Basis*; the Union of the two Branches is call'd the *Head* of the *Stirrop*; in the small Cavity of which is receiv'd the *Head* of (4.) The *Os*

Orbiculare.

Orbiculare, which is a very small Bone, and receives the other *Leg* of the *Anvil*. Besides these Bones, there are several *Holes* in the *Tympany*, of which the *Fenestra Ovalis*, and *Rotunda*, are the chief; the latter leads to the *Cochlea*; the former to the Cavity

*Fenestra
Ovalis, and
Rotunda.*

Vestibulum.

call'd the *Vestibulum*, in which opens the upper Turning of the *Cochlea*, and the three *semicircular Pipes* of the next Cavity, call'd the *Labyrinth*, which Pipes are excavated in the *Os Petrosum*. The last Cavity of the Ear is the *Cochlea*, so call'd as being like a *Snail's Shell*, winding in a *spiral Line*.

Labyrinth.

Cochlea.

*The Sense of
Hearing, how
affected.*

By this curious *Mechanism* of the Ear is the Sense of *Hearing* effected. For Sounds striking on the *Drum*, move the four little Bones in the *Tympany*, and these move the internal Air in the *Vestibulum*, *Labyrinth*, and *Cochlea*, which make *Impressions* on the Branches of the *Auditory Nerve* spread over the various Surfaces of those Cavities; and thus they become perceptible at the *common Sensory*, and all the *Sounds* distinctly *audible* and *intelligible* to the *Mind*, by the Communication of the said Nerve with the Brain.

THE

ANATOMY epitomiz'd.

47

THE *Nose* is a Part destin'd chiefly for *Of the Nose, the Organ of Smelling.*
the Sense of *Smelling*; it consists of *Skin, Muscles, Cartilages, and Bones.* Its Upper Part consists of two *Bones* closely joined on the upper Side; and four *Cartilages* constitute the lower Part of the *Nose*; of which the two first are fixed to the aforesaid *Bones*, and joined on the upper Side; and other two lie upon the lower End of these, to which they are tied by a *Membrane* call'd *Narium Ala.* The Cavity thus made is divided into two Parts, called *Nares*, or *Nostrils*, by a Partition, *bony* at the upper End, and *cartilaginous* at the lower; and the fleshy Extremity of this *Cartilage* is call'd *Columna.* At the Bottom are two little Holes, which carry the thin *Rheum* from the *Nostrils* into the Mouth. The Cavity is cover'd with a thick and *glandulous Membrane*; its *Glands* separate the Matter call'd *Mucus*, or *Snot*; and the Hairs which grow on the lower End are call'd *Vibrissi*; those, with the *Mucus*, stop any *Filth* from ascending too far up the *Nostrils*. *Ala Narium. The Nostrils. Columna. The Vibrissi.*

THE immediate *Organ of Smelling* lies in the upper Part of the *Nose*; it is made of the *Os Cribriforme*, and its Production the *Os Spongiosum*; of which each *Lamina* is covered with a fine *Membrane*, upon which the *Fibres* of the *Olfactory Nerve*, and some of the fifth Pair, are spread, and there receive the Impression made by the *Exhalations*, or *Effluvia* of *Odoriferous Bodies*; which *The Sense of Smelling, how perform'd.*

which being convey'd by this *Nerve* to the *Brain*, do there excite the *Notions* and *Ideas* of *Smells* in the *Mind*.

*The Parts of
the Mouth.*

The Lips.

The Gums.

The Palate.

The Uvula.

*The Glands,
viz.*

*The Parotides.
Maxillares.*

Sublinguales.

Tonfillæ.

THE *Mouth* and *Tongue* are the last Parts to be consider'd in the *Head*. The Parts of the *Mouth* are, (1.) The *Lips*, which are made of several *Muscles*, whose Use is to shut the *Mouth*, and articulate the *Voice*, (2.) The *Gingivæ*, or *Gums*, which are a hard sort of *Flesh*, formed by the Union of two *Membranes*, viz. of the *Periosteum*, and the inner one of the *Mouth*. They are set about the *Teeth* to keep them firm in their *Sockets*. (3.) The *Palate*, or *Roof of the Mouth*; it is cover'd with a thick *Membrane*, upon which there are a great Number of *Glands*, which discharge a *Liquor* for moistening and dissolving the *Aliments*. (4.) The *Uvula*; its Substance is very lax and glandulous, and of a conical Figure; it hangs from the *Palate*, at the End of the Passage to the *Nose*, above the *Larynx*, between the *Tonfils*. Its *Muscles* give it such *Motions* as are necessary for articulating the *Voice*, and preventing any thing's regurgitating into the *Nose* in *Deglutition*. (5.) The *Glands*; of which the principal are the *Parotides*, one on each Side under the *Ear*; the *Maxillares*, situated within the under *Jaw*, one on each Side; the *Sublinguales*, one on each side the *Tongue*; the *Tonfillæ*, or *Almonds*, are placed on each side the Basis of the *Tongue*; with

with several other small *Glands*; all which separate a sort of *Saliva*, or *Spittle*, which conduces to the Dissolution of the *Aliments* in *Mastication*.

THE *Tongue* (admirably contrived for the Faculty of *Speech*, and *Sense* of *Tasting*) is connected in the Mouth to the *Os Hyoides*, and to the *Larynx*, by a *Ligament* in the middle of its lower Side. The Substance of it is *musculous*, being made of Planes of *Fibres* in different Directions; some of which contract and shorten the *Tongue*; others draw the Sides together, and make it round; and some make the *Tongue* broad and thin. The *Tongue* is covered with two *Membranes*; in the outer one are a great Number of *Papillæ*, of a pyramidal Figure, which serve to make the *Tongue* rough; but chiefly to preserve the *Papillæ Nervosæ*, situated beneath in the internal *Membrane* on the Sides, but mostly on the Tip of the *Tongue*. These *Papillæ* are the immediate *Organs of Taste*; for being made up of the *Extremities* of *Nerves*, they thereby transmit to the common *Sensory* in the Brain, the *Sensations* of those *Qualities* in Bodies which we call their *Tastes* and *Savours*.

FROM the upper, we now descend to the middle Cavity, or Region of the Body, and view the *Viscera* contained in the *Thorax*. To the *Thorax* therefore pertains the Description of (1.) The *Larynx*, *Trachea*, and *Lungs*. (2.) The *Pleura* *Mediastinum*, and *Thymus*.

Of the *Tongue*,
the Organ of
Tasting.

Its Substance.

Papillæ
Pyramidales.

Papillæ
Nervosæ.

Tastes, or *Savours*,
what.

Of the middle
Cavity, or
Thorax.

Its Contents.

Thymus. (3.) The *Diaphragma*, or *Midriff*. (4.) The *Pericardium*, *Heart*, and its Parts. (5.) Of the *Breasts*. Of which in Order.

Of the Larynx.

FROM the *Mouth* lies a Passage to the *Lungs*, the upper Part of which is called the *Larynx*; it lies below the Root of the

Its Cartilages.

Tongue, before the *Pharynx*. It is composed of five *Cartilages*; the first *Thyroides*, *Scutiformis*, or like a *Shield*; this makes

that Protuberance in the Throat call'd *Pomum Adami*, or *Adam's Apple*. The second is the *Cricoides*, or *Annular Cartilage*. The

third and fourth are alike, and both call'd *Arytænoides*; they make the *Rimula*, or

The Glottis.

Mouth of the *Larynx*, call'd the *Glottis*; over which lies the fifth *Cartilage*, call'd the

The Epiglottis.

Epiglottis, resembling a little *Tongue*. The

Aliments passing over it into the *Oesophagus*, press it down, thereby preventing any going

Its Use.

down the *Wind-Pipe*; but when they are past, it rises again by its *natural Retort*, and gives way to the Air in *breathing*; which is one Part of its *Use*, the other being to form and modulate the *Voice*.

Of the Tra-

chea, or Wind-
pipe.

FROM the *Larynx* is continued the *Trachea*, or *Wind-pipe*, through which the Air passes to the *Lungs*. It is situated in the fore Part of the Neck; it consists of *annular Cartilages*, placed at small and equal Distances, growing smaller as they approach the *Lungs*, which they enter at the fourth *Vertebra* of the Back; these *Cartilages* serve

to keep the Passage always open for the Air.

THE *Trachea* enters the *Lungs* by various *Of the Lungs.*
Branches, and are there call'd *Bronchi*, which *The Bronchi.*
 subdivide into infinite and most minute *Ra-*
mifications through all the Substance of the
Lungs. The *Lungs* are divided into two
Lobes by the *Mediastinum*, in the Form of a *The Lobes.*
Cow's Foot; they are variegated with a pale
 and reddish *Colour*. Their Substance is com- *Their Sub-*
 posed of an infinite Number of *little Lobes*, *stance.*
 of various Size and Shape, which admit but
 very small *Interstices*; they are disposed like
 Bunches of Grapes on the Sides of the *Bron-*
chi; each little *Lobe* contains, within its
 Membranes, numerous small *orbicular Ve-*
scles; the *Extremities* of the *Branches* of the *The Office of*
Wind-pipe open into the Cavity of these *Ve-* *the Lungs.*
scles, and the *Capillary Blood-Vessels* are
 spread upon their Surface like Net-work.
 By this means the Blood is impregnated with
 the *Vital Spirit* of the Air, in every Circu-
 lation; by the Dilatation of the Breast, and
 Weight of the Atmosphere, the Air rushes
 into the *Lungs*, and fills every little *Bladder*,
 which is call'd *Inspiration*; but by the Con- *Inspiration.*
 traction of the Breast, the Air is again for-
 cibly expell'd, and this Action is call'd *Ex-* *Expiration.*
piration; both which alternate Operations
 of the *Lungs* are called *Respiration*; which *Respiration.*
 is the most evident *Office* of the *Lungs*, and
Means of Life.

Of the Pleura.

IN the Cavity of the *Thorax*, we observe that it is covered with a double Membrane, called the *Pleura*; it arises from the *Vertebrae*, and ascends, on each Side, upon the *Ribs* to the middle of the *Sternum*; it is fixed to the *Periosteum* of the *Ribs*, the intercostal *Muscles*, and covers the *Midriff*.

And Mediastinum.

The *Mediastinum* is a double Membrane, form'd by the Continuation of the *Pleura*, which comes from the *Sternum*, and goes strait down through the middle of the *Thorax* to the *Vertebrae*, dividing it into two Cavities for the two *Lobes* of the *Lungs*, to the end that one *Lobe* may officiate, in case the other be hinder'd by a Wound, &c.

Of the Thymus.

The *Thymus* is a *conglobate Gland* in the upper Part of the *Thorax*, under the *Claviculae*; it is large in Infants, and as they grow old, it grows less; its Use is supposed to be a *Diverticulum* to the *Chyle*, in the *Thoracic Duct* of a *Fœtus*.

Of the Diaphragm, or Midriff.

THE *DIAPHRAGMA*, or *Midriff*, is composed of two *Muscles*, which divide the *Thorax* from the *Abdomen*; the *Fibres* of these *Muscles* tend towards the Centre, and terminate in a *Tendon*, or *Aponeurosis*, which is taken for the *nervous Part* of the *Midriff*. It is cover'd with a Membrane from the *Pleura* above, and from the *Peritonæum* below. It hath Holes for the Passage of the *Vena Cava*, *Oesophagus*, and *Nerves*; and between the Productions of the interior Part, passes the *Aorta*, *Thoracic Duct*, and *Vena Azygos*.

Its Foramina, or Holes.

Azygos. It is *convex* on its upper, but *concave* on its lower Side. Its Use is to assist in *Respiration*, by enlarging and contracting the Cavity of the Breast; and it also presses the *Stomach* and *Intestines* for the Distribution of the *Chyle*.

IN the *Duplicature* of the *Mediaſtinum* Of the Pericardium. lies the *Pericardium*, and is connected therewith; it is of a *conical Figure*, with its Point inserted and fixed to the *Midriff*. It contains the *Heart*, and a Spoonful or two of a *clear Water*, to supple the Surface thereof, Its Water. that it grow not dry with continual Motion. Its *Basis* is pierced, for the Passage of Vessels from the Heart, in five Places.

THE *Heart* is a compound Muscle; its Of the Heart. Substance is of Fibres, of the same Nature Its Substance muscular. as those of other Muscles; there are several Orders of them in several Directions, whose Tendons are all in the *Basis* of the Heart. It is of a *conical Figure*, with its *Basis* upwards; it is fasten'd to the *Mediaſtinum* and *Pericardium*, and sustain'd by the large Vessels which bring and carry back the Blood. Its Figure. At the *Basis* of the Heart are two *Auricles*, The Auricles. or *little Ears*, one on the right, the other on the left Side; in the right Ear opens the *Vena Cava*, in the left the *Vena Pulmonalis*. Beneath these two *Auricles*, and answering thereto, are two *Cavities* in the Body of the Heart, call'd *Ventricles*; whose Sides are very Its Ventricles. sinuous and unequal. The Vessels which enter and proceed from the Heart, are the
Vena

The Action of
the Heart
twofold,
Systole, and

Diaſtole.

Of the Breasts.

The Lactiferous
Tubes.

Their Uſe.

Of the Lower
Region, or
Abdomen, di-
vided into the
Epigaſtrium,

Vena Cava, the *Arteria* and *Vena Pulmonalis*, and the *Aorta*, or *Great Artery*. The Action of the Heart is twofold; the first is call'd *Systole*, when the Fibres of the Heart contract the *Ventricles*, and expel the contained Blood into the *Aorta* thro' the Left Ear, and thro' the Right into the *Arteria Pulmonalis*. The second is call'd the *Diaſtole*, which is when the Muscle ceaſeth to act; its *Ventricles* then become large and wide, and are fill'd with the refluent Blood from the *Vena Cava* and *Pulmonalis*. This *Systole* and *Diaſtole* are common to the *Auricles* as well as the *Ventricles*, but are alternate to each other.

THE BREASTS, as to the Substance of them, are composed of a great Number of *Glands* of an oval Figure, which lie in a great Quantity of *Fat*; whose *excretory Ducts*, as they approach the *Nipple*, unite and form eight or ten small Pipes, call'd *Tubuli Lactiferi*, which all terminate and open in the Extremity of the *Nipple*; whence the *Milk*, ſecern'd from the Blood by theſe *Glands*, flows out when the *Breasts* are full, or upon *Suction*; which is the Uſe of the *Breasts* in *Women*, as *Ornament* and *Similarity* is of the *Breasts* in *Men*.

WE are now arriv'd at the *Lower Region* or *Cavity* of the Body, call'd the *Abdomen*, or *Belly*. It is divided into three *Parts* or *Regions*, viz. (1.) The *Epigaſtrium*, which is the Upper-part, and reaches to within

two

two Fingers breadth above the *Navel*; its two Sides are call'd *Hypochondria*. (2.) The *Regio Umbilicalis*, or Region of the *Navel*; *Regio Umbilicalis.* this reaches to the same Distance below the *Navel* as above; its Sides are call'd *Epiploicae*. (3.) The *Hypogastrium*, or Lower *Hypogastrium.* Belly; its Sides are call'd *Ilia*, and at Bottom *Inguina*, or the *Groins*, which are on each Side the *Pecten* or *Regio Pubis*. I shall mention all the *Viscera* in the *Abdomen* as they appear upon raising the *Skin*, *Fat*, and *Muscles* of the *Lower Belly*, in the following Order.

THE *PERITONÆUM* first appears under the *Muscles*; it is a thin and soft Membrane which incloses all the Bowels of the *Abdomen*: It lines the *Midriff*, and is connected closely thereto, as also to the transverse *Muscles*, the *Linea Alba*, *Os Pubis*, *Os Sacrum*, and *Vertebrae* of the *Loins*. It has a Number of small Glands which separate a Liquor to supple the *Intestines*, and facilitate their *Motions*. 'Tis a Double Membrane, and contains in its *Duplicatures* the *Umbilical Vessels*, *Bladder*, *Ureters*, and *Spermatic Vessels*; to all which it gives a Membrane, or outer Coat, as also it doth to all the other *Viscera* it contains. Its external *Lamina* has two *Productions*, like two *Sheaths*, which *Its Duplicatures.* pass out of the *Abdomen* with the *Spermatic Vessels* to the *Scrotum* in Men, but in Women they give a Passage to the round *Ligaments* of the *Womb*. *Its Productions*

WHEN

Of the Omentum or Casul.

WHEN the *Peritonæum* is cut, the *Omentum*, or *Casul*, presents itself first to view. This Membrane is most delicate, fine, double, and interlarded with a great deal of *Fat* to grease the Superficies of the Guts, which it contains as in a *Bag*, and to facilitate their *peristaltic* Motion. Its Mouth is tied on the Right to the *Liver*, on the Left to the *Spleen*; backwards to the *Duodenum* and *Colon*, and forwards to the Bottom of the *Stomach* and *Pylorus*: Below it lies loose floating on the Surface of the Guts, whence the *Greeks* call'd it *Epiploon*. Its Use is to enclose the Guts and supple them, to promote *Digestion*, and help the *Concoction* of the *Chyle*, to strengthen and sustain *Vessels*, &c.

Its Use.

Of the Oesophagus, or Gullet.

THE *OESOPHAGUS*, or *Gullet*, is a long, large, and round Canal, which descends from the Mouth to the *Stomach* in the *Abdomen*, which it joins on the Left Side: It is composed of three Coats; the outer one is *membranous*, the two inner ones are composed of *Muscular Fibres* in various Directions, by whose Action the Aliments are thrust down into the *Stomach* with a kind of *spiral* or *peristaltic* Motion. The upper End hereof, in the Mouth, is call'd the *Pharynx*, which is open'd to receive the Aliments by the Muscle *Stylo-pharyngæus*, and shut again by the *Oesophagæus* in Deglutition.

Pharynx.

THE

THE STOMACH receives the Aliments *Of the Stomach* from the *Oesophagus* by the Left Orifice, call'd *Cardia*. Its Figure is like that of a *Bag-pipe*, being long, large, wide, and roundish at the Bottom, but shorter and less convex above on its Upper-part. It consists of four Coats. The first is a common *Tunicle* *Its Coats* from the *Peritonæum*: The second is *Muscular*, being made of strait and circular Fibres: The third is altogether *nervous*, very fine and thin, and of an exquisite Sense: The fourth, and inmost, is large, thick, and full of Plaits and Wrinkles, which prevent the Chyle from running out of the Stomach before it is digested. In this Coat are several Glands which separate a Liquor that supplies the Cavity of the Stomach, and helps the Concoction of the Aliments. The Use of *Its Use* the *Stomach* is *Digestion*, which is the Dissolution and Separation of the Aliments into such minute Parts as constitute a Liquor of a milky sort, call'd *Chyle*, which, by the *The Chyle* Action of the Stomach, ascends through its right Orifice, call'd the *Pylorus*, into the *The Pylorus* first of the *Intestines*, where it enters the *Lacteal Vessels*, and carries the nutritious Part of the Aliments into the Mass of Blood.

THE *Stomach*, as I said, is join'd to, and *Of the Intestines* communicates with the *Intestines* by its Right Orifice the *Pylorus*. The *Intestines*, or Guts, *What they are* are a long, large, membranous, and nervous Tube or Pipe, which, by several Circumvolutions and Turnings, reach to the Fundament,

The Coats of
the Guts.

Valvulae Con-
niventes.

The three small
Guts.

The Duodenum.

Jejunum.

Ileum.

ment. They are knit all along to the Edges of a Membrane call'd the *Mesentery*. They are compos'd of three Coats; the first is common, from the *Peritonæum*; the second is made up of two Orders of *Muscular Fibres*, of which one runs strait, the other in a spiral manner, round the Guts, which gives them their constant, uniform, *vermicular*, or *peristaltic Motion*; the third, and inmost Coat, is made of thick short Fibres, standing *perpendicular* on the next Coat: This Coat, being much longer than the others, lies in Wrinkles and Folds call'd *Valvulae Conniventes*, which are much larger in the great Guts than in the small ones. The *intestinal Tube* is divided into six Parts or Guts, of which three are thin and small, three thick and large. (1.) The first is call'd *Duodenum*, as being about *twelve* Fingers Breadth in Length; it is join'd to the *Pylorus* of the Stomach, and receives the *Bile* and *Pancreatic Juice* for preparing the *Chyle* to enter its *Lacteal Veins*. (2.) The *Jejunum* begins thence, and by several Turnings and Windings from the Right to the Left, and *vice versa*, is continued to the *Ileum* for the length of about twelve or thirteen Hands-breadth. In this the *Chyle* enters the *Lacteals* in greater Plenty. (3.) The last of the *small Guts* is the *Ileum*, about twenty-one Hands-breadth long, which, by several Circumvolutions, fills all the lower Part of the *Umbilical Region*. (4.) The first
Great

Great Gut is call'd *Cæcum*; but this indeed is only an Appendage of, (5.) The *Colon*, which is the greatest and widest of all the *Guts*, and about eight or nine Hands-breadth long. It takes a Circumference round the other *Intestines*, and ends at last in, (6.) The *Rectum*, which goes strait down to the Fundament, and its Extremity is call'd the *Anus*, which is always kept shut by the *Sphincter Muscle*, which the Weight of the *Fæces* opens.

The Great Guts.
The Cæcum.
Colon.

Rectum.

THE *MESENTERY*, to which the *Intestines* are connected, as aforesaid, is a fat Membrane of almost a circular Figure, and about four Fingers breadth and a half in Diameter. It is strongly tied to the first three *Vertebræ* of the Loins; between its Coats run various Vessels, and in the Middle is the *Pancreas Aselli*, which, with others, receive the *Lympha* and *Chyle* from the *Lacteals*; of which more by and by.

Of the Mesentery.

Pancreas Aselli.

THE *PANCREAS*, or *Sweet-bread*, is a Gland of the conglomerate Sort, situated between the Bottom of the *Stomach* and *Vertebræ* of the Loins. It reaches from the *Liver* on the right, to the *Spleen* on the left Side, and is tied to the *Peritonæum*; from which it receives its common Membranes. Its Substance is soft and supple; every little Gland has a small excretory Vessel, which, uniting all together, form one common Duct about the Size of a Quill, clear and transparent, which runs all along the Middle

Of the Pancreas, or Sweet-Bread.

Its Substance.

Its common Duct.

*The Use
thereof.*

of the *Pancreas*, and opens at its Lower-end into the Cavity of the *Duodenum* Gut, discharging therein the *Succus Pancreaticus* (or Liquor which this *Viscus* separates from the Blood) for diluting the Chyle as aforesaid.

Of the Liver.

THE *LIVER* lies in the right *Hypochondrium*; it is convex on the upper Side, and concave on the under Side, which covers the *Pylorus*, Part of the *Stomach*, *Colon*, *Jejunum*, and *Omentum*. It is roundish and pretty thick; its Middle and Fore-part is divided into two by a *Fissure*, where the umbilical Vessels enter. It is fasten'd chiefly to the *Diaphragm*, by a strong Ligament. Its Substance is composed of small Glands, which hang from the Branches of the Vessels like Bunches of Grapes; these *Glandulae* secrete from the Blood that Liquor we call the Bile, which is of two Sorts; the one is deposited in a little Bag, and is call'd *Gall*, and the Bag the *Gall-Bladder*; the other is call'd the *Bile*, which is drain'd from the Liver through the Duct call'd the *Porus Bilarius*, which after having pass'd out of the Liver is join'd with another Duct from the Gall-Bladder, call'd *Ductus Cysticus*; which two being now cover'd with a common Membrane make the common Duct call'd the *Choledochus*, which goes obliquely to the lower End of the *Duodenum*, or Beginning of the *Jejunum*, and there discharges the *Bile*.

Its Form,

And Substance.

The Gall.

The Gall-Bladder.

The Bile.

The Porus Bilarius.

Ductus Cysticus.

Choledochus.

THE

THE *SPLEEN* is situated in the left *Of the Spleen.*
Hypochondrium, between the *Ribs* and *Sto-*
mach; it is tied to the *Peritonæum*, *Midriff*,
 and *Omentum*; of a Size and Colour well
 known. It is cover'd with two Membranes,
 the first common, the other fine and thinner:
 The Spleen is composed of an Infinity of *Its Substance,*
 Membranes which form little *Cells* and *Cavi-*
ties, which communicate with one another,
 and are always full of Blood of a dark Colour:
 The Use of the Spleen being, as is supposed, *And Use.*
 to contain the superfluous Arterial Blood, as
 in a *Reservoir*, and by a longer and slower
 Course to prepare the Bile for Separation in
 the Liver.

THE *KIDNEYS* are in Number *Of the Kid-*
 two, one on each Side; have the Figure of *neys.*
Kidney-Beans; the Right is under the *Liver*,
 the Left under the *Spleen*. Their Substance *Their Sub-*
 at first is divided into several Lobes join'd to- *stance.*
 gether, which in *Adults* become more close,
 and therefore their Superficies is equal and
 smooth. They are inclosed within two Mem-
 branes, and cover'd with much Fat. Their
 Substance is composed of an Infinity of *small*
Glands, every where interwoven in the *Net-*
*like Inosculation*s of the fine Capillary Bran-
 ches of their Arteries and Veins; from each
 small Gland proceeds a long small Tube, these
 Tubes compose the inner Substance of the
Reins; as they approach the *Pelvis* or *Basin* *The Pelvis or*
 they form little Bundles, whose Extremities *Basin.*
 pierce the Membrane of the *Pelvis*, and
 there

there pour in the *Urine* which the Glands of the Reins had fecern'd from the Blood brought to them by the *Emulgent Arteries*. The *Pelvis* or *Bason* is a Cavity in the Middle of the Kidneys containing the separated Urine, and is form'd by the Dilatation of the *Ureters*, which are two long and small Canals, one on each Side, leading from the Reins to the *Bladder*, where they are inserted near its Neck; they convey the Urine from the Kidneys to the Bladder. They are composed of three Coats; the first common, the second *Muscular*, and the last Nervous and very sensible.

The Ureters.

Their Use.

Of the Glandulæ Renales.

IN the Middle between the *Aorta* and the Reins, a little above the *Emulgent Vessels*, are situated the *Glandulæ Renales*; they are two in Number, one on each Side, wrapt up in some Fat; their Figure is various and irregular; and their Size that of a *Nux Vomica*. Their Use is not known.

Of the Bladder.

THE *Bladder* is situated in the *Duplication* of the *Peritonæum*, above the *Rectum* in Men, and the *Womb* in Women. It is tied to the *Navel* by the *Urachus* degenerated into a *Ligament*, its Sides to the *Umbilical Arteries*, and its Neck to the *Rectum* in Women. It is compos'd of Coats the same in Number and Nature as those of the *Ureters*; around its Neck goes a small Muscle call'd *Sphincter Vesicæ*, which constricts the *Orifice* of the Bladder, that the Urine may not run out involuntarily. Its Use is to be a *Reservatory*

Its Coats.

Sphincter.

And Use.

servatory of the Urine, that it might not continually run from us, as it is separated from the *Kidneys*.

THE PARTS of GENERATION Of the Genital Parts in Men. in Men (which we are now arrived to) are as follow.

(1.) The *Scrotum*, or Purse that contains the *Testicles*; which, besides the Skin and *Memb. Adiposa*, is compos'd like- The Scrotum.

wise of many fleshy and muscular *Fibres*, by means of which it is generally contracted in a healthy State. The first of its proper In- Its Tunicles.

teguments is call'd *Tunica Vaginalis*, and contains the *Vasa Præparantia* and *Deferentia*; it embraces loosely the *Testicles*, adheres to the *Epididymis*; and on its Out-side is in-

serted the *Cremaster Muscle*. The second is that which covers immediately the *Testicles*, and is call'd *Albuginea* or *White Coat*; it is strong and thick, very smooth and equal; the Branches of the *Vasa Præparantia* are finely wav'd upon it. (2.) The *Testes* or *Testi-* The Testicles.

cles: Their Substance is nothing but the Folding of several small and soft Tubes, which run in short Waves from the *Tunica Albuginea* to the Axis of the *Testicles*, which there form larger Tubes; and these running to the End, pierce the *Albuginea*, and unite into one Canal, which by several Turnings and Windings form that Body (on the Upper-part of the *Testicles*) which we call (3.)

Epididymis, and which from thence continuing and ascending upwards, forms the The Epididymis.

Seminal Vessels call'd (4.) The *Vasa Deferen-* The Vasa Deferentia.
tia,

*The Vesiculæ
Seminales.*

Their Use.

The Prostata.

*Their Sub-
stance.*

And Use.

*Caput Gallina-
ginis.*

tia, one from each *Epididymis*, of the Size of a Goose-Quill. As they ascend within the *Tunica Vaginalis*, they make several short *Turnings* and *Windings*, passing through the Abdominal Muscles, and between the Bladder and Strait Gut; they grow wider as they approach (5.) The *Vesiculæ Seminales*, which are two in Number, one on each Side; they are cover'd with a thin Membrane, and their external Surface resembles that of the Brains in some measure. They have two considerable Cavities divided into membranous Cells, which open distinctly by two little Orifices into the two *Vasa Deferentia*, which deposit the Seed therein till the Time of Coition. At which Time these Bladders being compress'd by a Muscular Membrane, resign and yield forth the Seminal Matter, which is again receiv'd by the *Vasa Deferentia*, and carried by them through (6.) The *Prostata*, or *Corpus Glandulosum*, which is a Conglomerate Gland situated at the Neck of the Bladder; it is cover'd also with a Membrane of Muscular Fibres. Its Substance is Vesicular and Glandulous, about the Size of a Walnut; the little Glands separate a clear mucilaginous Humour, which lies in the Vesicles till Coition, when it is carried into the Beginning of the *Urethra* by 11 or 12 excretory Ducts, which open about the Orifices of the *Vasa Deferentia*, which are also here inserted; and each Orifice has a Spongy Border called *Caput Gallinaginis*, which

which hinders the involuntary running of the Seed. (7.) The *Penis* or Yard is a Mem- *The Penis.* ber well known as to its Shape and Dimensions; its Skin has a *Reduplication*, which makes a Hood call'd *Præputium*, to cover the *Præputium.* Top call'd the *Glans*, and is tied thereto be- *Glans.* neath by a small Ligament call'd *Frænum.* *Frænum.* The Substance of the *Penis* is composed of two long spongy Bodies, call'd *Corpora* *Corpora Ca-* *avernosa.* *avernosa*; which arise from the *Os Pubis*, and a little after come close together, being separated only by a thin Membrane; and thus they proceed to the *Glans*, in the Middle of which they terminate. The external *Their Sub-* *stance.* Substance of these Bodies is hard, thick, and white; the internal is composed of small Fibres and Membranes, which form a sort of loose *Net-work*, on which the Branches of the Blood-Vessels are curiously spread; and through the fine Capillaries the Blood (being stop'd in the larger Vessels) rushes into those Membranous Cells, by which Means the *Corpora Cavernosa* become distended, hard, and the *Penis* erected. (8.) The *Ure-* *The Urethra.* *thra* is a long Pipe or Tube, which beginning at the Neck of the Bladder, proceeds under the *Os Pubis*, and turning up to the Roots of the *Cor. Caver.* is continued on the under Side to the End of the *Penis*; where, *Its Use.* by its Orifice in the Top of the *Glans*, it discharges the *Urine* from the Bladder, and the Seed which it receives from the *Vasa Deferentia* in Venery.

Of the External Parts of Generation in Women.

The Vulva.

Mons Veneris.

Labia.

The Nymphæ.

The Clitoris.

Here call'd the Crura Clitorides.

The Urethra.

THE PARTS of GENERATION in Women are both *External* and *Internal*. The *External* are (1.) The *Vulva* or *Great Chink*, situated below the *Os Pubis*, and cover'd with Hair in the Adult; above this there is a little rising Part made by some Fat under the Skin, and is call'd *Mons Veneris*, or Mount of *Venus*. The *Labia* or Lips of the *Vulva* are only the Skin swell'd with Fat underneath; these being a little separated, there appear (2.) The *Nymphæ*, one on each Side the Chink: They resemble the Membranes which hang under the Throats of Pullets. Their Substance is spongy, and full of Blood-Vessels, and therefore swell in the Act of Copulation. Their Use is to direct the Urine, to defend from external Injuries, and to increase the venereal Pleasure. (3.) The *Clitoris*, a long small and round Body, about the Size of the *Uvula*, situated in the upper Angle of the *Vulva*, and of the Figure and Make of the *Penis* in Men, having the *Corpora Cavernosa*, the *Præputium* and *Glans*, like that; the *Glans* only appears without the Skin, it is of an exquisite Sense, and the *Stimulus Veneris* in Coition; it is perforated at the Top, but is not pervious, like the *Penis*. The *Clitoris* also arises from the *Os Pubis*, and its Muscles erect it in Venery. (4.) A little below the *Clitoris* is the Orifice of the *Urethra*, of the Bigness of a Goose-Quill, by which the *Urine* only is convey'd from the Bladder. (5.) Between the *Sphincter*

Her Muscle of the Urethra, and the inner Membrane of the *Vagina*, lie several little Glands, whose excretory Ducts are call'd *Lacunæ*; they pour a viscous Liquor for Titillation into the lower Part of the *Vulva*.

(6.) The *Hymen* is a thin Membrane, being only the circular Folding of the inner one of the *Vagina*; which being broke at the first Copulation, its Fibres contract in three or four Places, and form what are call'd *Glandulæ Myrtiformes*.

Of the *internal Parts* of the *Pudendum Muliebre*, the first is (1.) The *Vagina*, or Neck of the *Womb*, which is a long, large, and round Canal, reaching from the *Vulva* to the *internal Orifice* of the *Womb*; it lies between the *Bladder* and the *Rectum*. Its Substance is composed of two Membranes; the inner of which is full of *Wrinkles* and *Sulci*, for the *Friction* and *Titillation* of the *Glans* of the *Penis*, to increase the Pleasure of Coition, to detain the Seed, and that it may extend in the Time of *Gestation*. The external Coat is of *muscular Fibres*, which dilate or contract the Cavity of the *Vagina*, for adjusting it to the Length and Bigness of the *Penis*. The Use of the *Vagina* is too well known to need mention. (2.) The *Matrix*, or *Womb*, is situated in the lower Part of the *Hypogastrium*, between the *Bladder* and *Rectum*, in the *Pelvis* of the *Skeleton*. It is in Figure of a Pear, from its internal Orifice to the Bottom; it is three Fingers Breadth

Glands.

The Hymen.

Glandulæ Myrtiformes.

Of the internal Parts of Generation in Women.

The Vagina.

Its Composition.

The Matrix, or Womb.

Its Figure.

- Substance.* Breadth long, two broad, and almost as much thick; but changes very much, both its Figure and Size, in Child-bearing. It is cover'd with the *Peritonæum*. Its Substance is composed of fleshy *muscular Fibres* in a Net-like Texture, that it may contract for the Expulsion of the *Fœtus*. There are various *interposed Glands*, which separate an Humour to lubricate the Cavity of the Womb.
- Orifice.* The *Mouth* of the Womb joins the upper End of the *Vagina*, with Protuberances in the Form of Lips, by some call'd *Os Tincæ*, or *Mouth of a Tench*. Near the Orifice within open several small Ducts, which discharge a glutinous Matter, to seal up the Mouth of the Womb in *Gestation*. The Womb is tied by two sorts of *Ligaments*, viz. *Ligamenta lata*, or *broad*; and *Ligamenta rotunda*, or *round*. The first, like the Wings of a Bat, arise from the *Peritonæum*; the *Ovaria* are fasten'd to one End of them, and the *Tubæ Fallopiæ* to the other. The *round Ligaments* tie the Womb to the *Os Pubis*, and to the *Mem. Muscle* on the Inside of the Thigh.
- The Vasa Præparantia.* (3.) The *Vasa Præparantia*, or *Spermatic Veins* and *Arteries*, as in Men, but shorter; they divide into two Branches; the smallest goes to the *Ovaria*; the biggest to the *Womb*, *Vagina*, and *Tubæ Fallopiæ*.
- The Ovaria.* (4.) The *Ovaria*, or *Testicles*, are near half as big as Men's are; they are cover'd with a proper and common Membrane; the latter is from the *Peritonæum*, and covers all the *Spermatic*

tic Vessels. The Substance is *fibrous* and *vesicular*; the small *Vesicles* are call'd *Eggs*, and are of a different Size and Number in Women of different Ages. They are round, and full of Water, which hardens like the White of an Egg, if boiled. (5.) The *Tubæ Fallopianæ* (analogous to the *Vasa Deferentia* in Men) are situated on each side the Womb; they arise from its Bottom by a narrow Beginning, and dilate in Form of a Trumpet to their Extremities, where they are again contracted into a small Orifice; from whose Circumference they dilate into a pretty broad Membrane, which, looking as if torn at the Edges, is call'd *Morsus Diaboli*, or *Devil's Bite*. Their Cavity will here take in the End of one's little Finger; but at the Womb will scarcely admit of a Hog's Bristle. Their Substance is of two Membranes, from the internal and external Coats of the Womb; and are in Length about four or five Fingers Breadth.

The Fallopian Tubes.

Morsus Diaboli.

As to the *Theory of Generation*, and the *Formation of the Fœtus in Embryo*, a short Account must suffice. (1.) The *Vasa Præparantia* in Men, are two *Arteries* and *Veins*; the *Arteries* carry the Blood from the *Aorta* to the *Testicles*, which separate the Seed, and the Blood is return'd by the *Veins* to the *Vena Cava*, and the left *Emulgent Vein*. (2.) The Seed thus prepared by the *Testes*, is by the *Vasa Deferentia* carried into the *Urethra* of the *Penis*; and from thence, in Coition,

Of the Theory of Generation.

The Vasa Præparantia in Men.

The various Steps in the Process Nature takes for the Formation of the Fœtus.

tion, it is injected into the Womb. (3.) The spirituous Part of the Seed pervades the *Fallopian Tubes*, and the *Ligamenta lata* contracting, pull the Extremities of those *Tubes* to the (4.) *Ovaria*, or *Testicles*, where the Seed entering impregnates the *Egg*; which, from being *pellucid*, now soon becomes *opaque*; 'tis cover'd with a thick yellow Substance, which presses it on all Sides, and excludes it through a little Hole in the middle; so that (5.) It again falls into the Orifices of the *Tubes*, which dilate sufficiently for its Passage into the Womb. (6.) The Vital Warmth, Humours, and Virtue of the Womb, after some time, give Life and apparent Motion to the *Animalcule* in the *Egg*, which now begins to swell and dilate, as Seed in the Ground. (7.) Then the *Placenta* begins to appear on the external Coat of the *Egg*, like a little Cloud; and, at the same time, the *Spine* of the *Embryo* becomes visible; and a little after the *Cerebrum* and *Cerebellum* appear like two small Bladders, and the Eyes next stand gogling out of the Head; then the Beating of the Heart, call'd *Punctum Saliens*, is plainly to be seen; and the Extremities of the Body last of all appear. (8.) The Membranes which involve the *Fætus*, are the same with the Coats of the *Egg*. The external is call'd the *Chorion*; it is pretty thick, and rough on its Outside, to which the *Placenta* adheres. It embraces immediately (9.) The *Amnion*, or *internal Membrane*,

What Parts
first appear.

The Chorion.

The Amnion.

brane, which is a fine and delicate Bag, full of a *clear Liquor*, in the middle of which the *Fœtus* swims. This *Liquor* is separated from the *Blood* by the *Glands* of the *Amnion*, for the *Nourishment* of the *Fœtus*. (10.) The *Umbilical Vessels*, consisting of *Arteries* and *Veins*, are wrapt up in a *Production* of the *Chorion* and *Amnion*; which, in the *Form* of a *String*, and about a *Foot* and half long, passes through the middle of the *Abdomen*, call'd the *Umbilicus*, or *Navel*; *The Umbilicus, or Navel.* the *Veins* carry the *Maternal Blood* to the *Fœtus* for its *Nourishment*, and the *Arteries* re-convoy the *superfluous Part* to (11.) The *Placenta*, which is a thick *Cake*, growing on the *Outside* of the *Chorion*. *The Placenta.* The *Branches* of the *Umbilical Vessels* are spread through all its *Substance*; which opening into the *Hypogastric Vessels*, the *Circulation* is perform'd between the *Mother* and the *Fœtus*. (12.) Thus Things continue till the *Fœtus* is mature for *Expulsion*, which makes the *Labour* and *Birth*; the *Navel-String* being then divided, the *Fœtus* is released from the *Womb*; then the *Placenta* falling off the *Womb*, makes the *Secundines*; as the *Dissolution* of the *Anastomoses* of the *Hypogastric Vessels*, and those of the *Placenta* occasion'd the flowing of the *Lochia* before. Moreover, in the *Matrix* of *Brutes* there is another *Membrane* call'd the *Allantois*, between the *Chorion* and *Amnion*, on the opposite Side to the *Placenta*; which, in *Form* of a *Bag*, receives

The Birth.

Of the Allantois in Brutes.

The Urachus.

ceives the Urine from the *Fœtus* by a Pipe call'd the *Urachus*, arising from the Bottom of the Bladder, and passes out at the Navel with the *Umbilical Vessels*; and 'tis suppos'd, or rather known, that Nature has also prepar'd the same Vessels for the *Human Fœtus*.

*Of Angiology,
and its Subject.*

WE are now come in our propos'd Method to the last Part of *SARCOLOGY*, which is call'd *ANGIOLOGY*, or the *Doctrine of the Vascular Part of the Body*; in which all the several Kinds of *Vessels*, as *Glands*, *Bladders*, *Receptacles*, *Arteries*, *Veins*, *Nerves*, *Ducts*, and *Tubes* of all sorts are described. But since in the foregoing Parts 'twas *unavoidable* to discourse of the *Glands*, and therefore the most considerable having been already describ'd, I shall only here observe in general, that

*Of Glands,
two sorts.
Conglobate,*

OF *Glands* there are two sorts, viz. (1.) *CONGLOBATE GLANDS*; such an one is a little smooth Body, wrapp'd up in a fine Skin, by which it is separated from all other Parts; admitting only an Artery or Nerve to pass in, and giving way to a Vein and excretory Duct to pass out. Of this sort are the *Glands* of the *Brain*, the *Lips*, and the *Testicles*. (2.) *CONGLOMERATE GLANDS*; these are compos'd of many little *Conglobate Glands*, all tied together, and wrapp'd up in one common Membrane. Sometimes all their *excretory Ducts* unite and form one common Pipe; as the *Pancreas*,

*And Conglo-
merate.*

Parotides,

Parotides, &c. Sometimes several Pipes; as the *Glandulæ Lachrymales*, and *Prostatæ*. Sometimes those several Pipes communicate by cross Canals, as the *Mammæ* of the Breasts; and lastly, sometimes the little excretory *Ducts* pour their Liquor separately into a common Basin; as the *Kidneys*. For the peculiar *Structure of the Glands*, and the *Manner of Secretion* perform'd by them, see Dr. KEILL at large in his *Anatomy*, Page 62, to 71.

THE *Tubular Vessels* are of the following Of the Tubular Vessels.
Kinds, viz. *Lacteal Veins*, *Lymphatic Ducts*, the *Thoracic Duct*, the *Arteries*, *Veins*, and *Nerves*; besides those other *Tubes* and *Ducts* already mentioned in *Splanchnology*. The *Arteries*, *Veins*, and *Nerves*, will be considered by themselves; the other will most naturally come under our View in the following *Theory of the Animal Oeconomy*, or *Circulation of the Blood*.

THE *Animal Oeconomy* is effected and con- Of the Animal Oeconomy.
served by the following *Gradations*. (1.) The *Aliments* being first minutely divided, and moisten'd in the Mouth by *Mastication*, Mastication.
descend the *Oesophagus* to the *Stomach*, (2.) Where they undergo a State of *Digestion*, *Dissolution*, and *Liquifaction*; which is call'd *Chylification*, Chylification.
or a *Reduction of them to Chyle*, as before described. (3.) From the *Stomach* the *Chyle* ascends by the *Pylorus* into the first of the *Intestines*, the *Duodenum* and *Jejunum*;
L where

*The Pancreatic
Juice.*

The Lacteals.

*Lactææ secundi
Generis.*

*Receptaculum
Chyli.*

*Lympha and
Lymphæducts.*

Thoracic Duct.

*How the Blood
ascends therein*

where (4.) it is diluted by the *Pancreatic Juice*, that it may more easily enter the Mouths of the *Lacteals*; and (5.) it is here mix'd with the *Bile* from the Liver, which sheaths and blunts the *Acids* of the *Chyle*, and thereby further promotes its *Dilution* and *Separation* by the *Succus Pancreaticus*. (6.) From hence the *Chyle* now prepared is received into the small *Orifices* of the *Lacteal Veins*, (while the grosser Part is extruded by the great Guts out of the Body, as an Excrement) which are long and slender *Pipes*, and so fine, as to become invisible when empty; they carry the *Chyle* to the *Vesicular Cells* of the *Glands* dispersed up and down the *Mesentery*: And (7.) from them arise other *Lacteals* of a larger Size, call'd *Lactææ secundi Generis*, which carry the *Chyle* immediately into (8.) The *Receptaculum Chyli*, or *Receptacle of the Chyle*; it is a small Bag, situated between the *Aorta* and *Vertebræ* of the Loins. (9.) The *Chyle* here is again farther diluted and perfected by the *Lympha*, or clear Liquor, like Water, brought hither by those Tubes call'd *Lymphæducts*, which come from the *Iliac*, *Lumbal*, *Mesenteric*, *Inguinal*, &c. *Glands*; they are very fine and pellucid; and both these and the *Lacteals* have *Valves* to prevent the returning of the Liquors. (10.) The upper Part of the *Receptacle* stretches itself out into a Tube call'd the *Thoracic Duct*, about the Bigness of a Goose Quill, Through this Duct the *Chyle*

Chyle is forced to ascend up to the left *Subclavian Vein*, by the conjoint Action and Pressure of the *Hypogastric Muscles*, the *Diaphragma*, and the *Pulsation* of the *Aorta*; and in its way up it meets with new Recruits of *Lympha* from the *Lymphæducts* of the *Thorax*, *Head*, and *Arms*. (11.) The *Chyle* being pour'd into the said Vein by one or two Orifices, cover'd with a Semi-lunar Valve, that the Blood may pass over them, and the *Chyle* run from beneath it, it is here mixed with the Venal Blood, and carried by the descending Branch of the *Vena Cava* into the right *Auricle*, and then into the right *Ventricle* of the Heart. (12.) From hence it is expell'd, by the *Systole* of the Heart, into the *Arteria Pulmonalis*, by which it is carried to the Lungs. (13.) By the Mechanism of the Lungs, the Sanguification of the *Chyle* is perform'd; there it receives its last Divisibility of Parts, its red Colour, and Animal Faculty and Spirits; and then (14.) it is return'd by the *Vena Pulmonalis*, thro' the left *Auricle*, into the left *Ventricle* of the Heart. (15.) Again, from thence it is expell'd into the Trunk of the *Aorta*, or *Great Artery*, and so passes through its various Branches, and minute Ramifications, to all the Parts of the Body; imparting its nutritious Part to the Whole for its Growth, Nourishment, and Conservation. (16.) Lastly, the superfluous Blood is return'd by the Veins to the Heart, to receive a fresh

*Sanguification;
how perform'd.*

The Circulation of the Blood.

Supply of *Chyle*, and then goes on as before; by which Means there is kept up a *perpetual Circulation of Blood* and *Chyle*, the immediate Cause of *Animal Life and Growth*.

Of the larger Vessels.

IT now remains, that we treat of the larger and more conspicuous Vessels of the Body; and that will be dispatch'd under the three following Heads, *viz.* (1.) *NEUROLOGY*, which treats of the *Nerves*. (2.) *ARTERIOLOGY*, or the Doctrine of the *Arteries*. (3.) *PHLEBOTOMY*, which discourseth of the *Veins*. Of these therefore in their Order.

Of Neurology, or Doctrine of the Nerves.

A Nerve, what.

NEUROLOGY delivers the Doctrine of the *Nerves*. A *Nerve* is a long and small Bundle of very fine Pipes, or hollow Fibres, having their Origin in the medullary Substance of the Brain, and are all wrapp'd up in the *Dura* and *Pia Mater*; which last also covers every particular Fibre.

Of the Animal Spirits.

THE *Nerves* contain a fine Spirit, (as is supposed) which renders them the *immediate General Organ of all Sensation*, in the Manner as has been described; and they attend the *Arteries* through all the Body, that those *Animal Spirits* may be kept warm, and moving, by the *continual Heat and Pulse of the Arteries*.

The Division of Nerves.

THE *Nerves* are divided into *Capital*, or those which come of the Scull; and *Vertebral*, or those which come out between the *Vertebrae*.

THE

ANATOMY epitomiz'd.

77

THE Capital Nerves proceed from the *Medulla Oblongata*, and they are ten Pair. *Of the Capital Nerves, 10 Pair.*

(1.) The *Nervi Olfactorii*, or *Olfactory Nerves*; they arise from the *Corpora Striata*, *Olfactorii.* and passing the small Holes of the *Os Cribri-*

forme are spread upon the Membrane of the *Os Spongiosum* in the Nose. (2.) The *Op-* *Optici.*

tici, or *Optic Nerves*: They arise from the *Corp. Striata*, and *Thalami Ner. Op.* and pass thro' the foremost Holes of the *Os Sphæ-*

noides into the Orbit, where piercing the Globe of the Eye, their Medullary Fibres are spread on the Vitreous Humour. (3.) The *Oculorum Motores.*

Oculorum Motores; which arise from the *Medul. Oblongata*, pass through the *Os Sphæ-*

noides, and give a Branch making a *Plexus* with the fifth Pair, and which send Twigs to the Optic Nerve and Tunicles of the Eye;

and they give another Branch to the Muscles of the Eye, call'd *Attollens*, *Deprimens*, and *Obliquus Minor*. (4.) The *Pathetici*, or *Pathetici.*

Pathetic Nerves; they arise behind the *Testes*, go down by the Sides of the *Medul. Oblon-*

gata, and passing through the *Foramina Lacera* of the *Os Sphænoïdes*, are wholly spent on the *Obliquus Major*. (5.) The *fifth Pair* *Fifth Pair.*

arises from the Fore-part of the *Processus Annularis*, and are the largest of all. They divide into several Branches, bestowing some on the *Dura Mater*, some to the *Optic Nerve*,

others on the Globe and Coats of the Eye, *Glandulæ Lachrymales*, and Frontal Muscles; while other Branches furnish the internal

Parts

Sixth Pair.

Parts of the Mouth, Jaws, Ears, Muscles of the Tongue, &c. with Nerves. (6.) The *Sixth Pair* is small, and entering the Orbit, is spent wholly on the Muscle of the Eye call'd *Abducens*. It arises from the Sides of the *Processus Annularis*. But a little before it goes out of the Skull it casts back a Branch, which alone makes the Root of the *Inter-costal Nerve*; which with several Branches of other Nerves, both *Capital* and *Vertebral*, forms several *Plexus's* which furnish Nerves to the Parts of the *Thorax* and *Abdomen*.

Ner. Auditorius.

(7.) The *Nervus Auditorius*, or *Auditory Nerve*; it arises from the Hind-part of the *Processus Annularis*, and passing through the *Os Petrosus* it divides into two Branches, of which one is spent on the Internal Ear, the other on the External, and on the Tongue, Nose, Lips, and Cheeks. (8.) The *Par Vagus*; it rises from the Sides of the *Med. Oblongata*, which going out of the Skull is spent in divers Ramifications and Divarications on the Parts of the *Neck*, *Thorax*, and Muscles belonging thereto. (9.)

Ninth Pair.

The *Ninth Pair* rises from the *Med. Ob.* and passing through its proper Hole in the *Os Occipitis*, is distributed in the Body of the Tongue, its *Papillæ Rotundæ*, and the Muscles of *Os Hyoides*. (10.) The *Tenth Pair* rises from the Beginning of the *Med. Spinalis*, and going out of the Skull, it gives Branches to the first and second Pair of the Neck, and a third to the *Intercostal Nerve*; and

Tenth Pair.

and then is all spent on the Oblique Muscles of the Head.

THE *Vertebral Nerves* are 30 Pair; they arise from the *Spinal Marrow*, and issue out between the *Vertebræ*, viz. (1.) *Seven of the Neck*; which are variously distributed to the Muscles of the Head, Neck, Back, Arms, and some to the *Thorax* and *Diaphragm*. (2.) *Twelve Pair of the Back*; which are spent on the Muscles of the Lower Belly, those which lie on the Ribs, and some on the Arm. (3.) *Five Pair of the Loins*; which furnish Nerves to the Muscles of the Lower Belly, the *Inguen*, the *Penis*, and the Parts in the *Bason*; others go to the *Thigh*, and are spent on its Muscles. (4.) *Six Pair of the Os Sacrum*; the great Branches of the first four Pair, with the last, and a Branch of the fourth of the Loins, make the *Nervus Sciaticus*, which is the greatest Nerve in the whole Body. It gives Branches to the Parts of the Leg, Foot, and Toes. The Fifth and Sixth Pair are very small, and dispersed in the Bladder, *Sphincter*, and Parts of Generation.

Of the Vertebral Nerves.

Seven Pair of the Neck.

Twelve Pair of the Back.

Five Pair of the Loins.

Six Pair of the Os Sacrum.

ARTERIOLOGY discourseth of the *Arteries*; these Vessels are of a taper conical Figure, and their Use is to carry the Blood from the Heart to all Parts of the Body. Each *Artery* is compos'd of three Coats; the first seems to be a Web of fine Blood-Vessels and Nerves for nourishing the Coats of the *Arteries*; and the second is made up of Circular

Of Arteriology. The Arteries, what.

Their Coats.

cular

Their Pulsation how caused.

cular or rather *Spiral Fibres*, which, having a strong *Elasticity*, are the immediate Cause of the *Arterial Pulsation*, and which are constantly kept in Action by the *Impetus* of the Blood, which it receives from the expulsive Motion of the Heart. The *Pulses* of the Arteries are equal to the Beats of the Heart in Number; but when the Heart contracts, the Arteries are dilated. The third or inmost Coat is a fine, dense, transparent Membrane, every way proper for its destin'd Use. As the Arteries grow, the Coats grow thinner, and the Coats of the Veins seem to be only a Continuation of the Coats of the Capillary Arteries.

Of the Aorta.

THE Blood is immediately receiv'd from the Heart by the Trunk of that great Artery call'd the *Aorta*, which coming from the left Ventricle sends two Branches, call'd *Coronariæ*, to the Heart, before it pierces the *Pericardium*. But after it has pierced it, it ascends a little, and turning downwards forms the *Aorta Descendens*.

Coronariæ.

The Aorta Descendens.

FROM the upper Side of this Crook, there ascend three Branches, viz. the Left *Subclavian* and *Carotide*, and the Right *Subclavian*, from which immediately arises the Right *Carotide*.

The Subclavian Arteries.

THE *Subclavian Arteries* on each Side send out the *Mediastine*, *Mammary*, *Cervical*, and *Vertebral* Branches; besides a Branch to the Muscles of the Neck, Breast, and to the *Glandulæ Thyroides*. After the *Subclavians*

vians have pass'd through the *Mus. Scalenus*, they are call'd the *Axillary Arteries*.

THE *Carotide Arteries*, besides several *The Carotides*. small ones, send four principal Branches to the Parts and Muscles of the Throat, Mouth, and external Part of the Head. The *Carotide* then passes into the Cavity of the *Cranium*, through the Canal in the *Os Petrosum*, and sends Branches to the *Meninges*, *Rete Mirabile*, *Plexus Choroides*; and then is spent through all the Circumvolutions of the *Brain* and *Cerebellum*.

THE *Axillary Artery*, having pierced the *The Axillaries*. *Scalenum*, descends on the Inside of the Arm; and, at the Bending of the Elbow, divides into two Branches, the *Internal* and *External*, which go down the *Cubitus* to the Hand and Fingers. In its Progress it supplies the Muscles, and Parts adjoining, with proper Branches and Capillaries.

THE *AORTA DESCENDENS* *Of the Aorta*
Descendens.
Bronchials. sends out first the *Bronchial Artery* to the *Wind-pipe* and its Branches; then as it descends the *Thorax*, it sends out on each Side the *Intercostal Arteries*. To the *Diaphragm* *Intercostals*. it gives the *Phrenic Branch*; and the *Cæliac* *Phrenic.*
Cæliac. is the first it sends out when it enters the *Abdomen*, and is spent on the *Viscera* contain'd therein; the several Branches taking their Names from the Parts.

THEN the *Aorta Descendens* sends out the *Mesenteric Branches* to the *Mesentery*; the *Mesenterica*.
Renales to the *Glandulæ Renales*, and Fat *Renales*.

M

about

Emulgents.

Spermatics.

Lumbales.

about the Reins; the *Emulgents* to the Reins; the *Spermatics*, or *Vasa Præparantia* to the *Testicles*; and the *Lumbales* to the Muscles of the Loins.

Of the Iliac Arteries.

WHEN the *Aorta* is come to the *Os Sacrum*, it divides into two great Branches call'd the *Iliac Arteries*; and from the Angle they make, springs out a small Artery call'd *Sacra*, because spread on the *Os Sacrum*. The *Iliac Arteries* divide again into the *internal* and *external Iliacs*.

The internal Iliacs.

FROM the *internal Iliac* arises the *Hypogastric Artery*, which is distributed to the *Bladder*, *Rectum*, the internal Parts of Generation, and all other Parts in the *Pelvis*, or *Basin*. Then it gives two considerable Branches, which go out of the lower Belly, and are spent on the Muscles call'd *Glutæi*, *Obturatores*, &c.

The external Iliacs.

THE *external Iliac* leaving the Cavity of the *Abdomen*, sends out the *Epigastric Branch* to the *Mus. Rectus*; and below that the *Pudenda* to the Privities. After this it descends along the Thigh, and is call'd the *Crural Artery*; whence, by several Branches and Divisions, it goes to the *Leg*, *Foot*, and *Toes*, where their *Capillaries* are spent upon, and lost in the Muscles and other Parts of the same.

*Of Phlebology.
The Veins,
what.*

PHLEBOTOMY gives an Account of the *Veins* of the Body. The *Veins* (as was said) are only the Continuation of the extreme *Capillary Arteries* reflected back to-

wards

wards the Heart, and uniting their Channels as they approach it, till at last they all form three large *Veins*, viz. (1.) The *Vena Cava Descendens*, which brings back the reflux Blood from all Parts above the Heart. (2.) The *Vena Cava Ascendens*, which brings the Blood from all Parts below the Heart; and (3.) The *Vena Porta*, which carries the Blood to the Liver.

CONTRARY to the Motion of the Blood, we begin with the great *Trunks* of the *Veins*, and proceed to the *Capillaries*. The Trunk of the *Cava Descendens* joins the Trunk of the *Cava Ascendens*, and both together open into the right *Auricle* of the Heart.

THE *Cava Descendens*, where it joins the *Auricle*, receives the *Coronary Vein* of the Heart. As soon as it pierces the *Pericardium*, it receives the *Azygos*, or single Vein, which runs along the right Side of the *Vertebræ* of the *Thorax*. It next receives the upper *Intercostal Vein*, and *Pneumonic Branch*, which accompanies the *Bronchial Artery*. When the *Cava Descendens* comes to the *Clavicles*, it is divided into two Branches call'd the *right* and *left Subclavian Veins*; which receive several other Branches, as the *Mammary*, *Mediastinal*, *Cervical*, *Vertebral*, *Muscular*, &c. as in the *Arteries*.

ALSO when the *Subclavian Branches* are come out of the *Thorax*, they are called *Axillary*; and receive the internal and external *Scapular Veins*; then they are divided into

Cephalics.
Basilics.

two Branches; the superior call'd the *Cephalic*, and the inferior the *Basilic Vein*, which are the principal Veins of the *Arms* and *Hands*.

The Jugular Veins.

THE *Subclavian Veins* also receive the external and internal *Jugulars*, which go to the Head: The external going to the Muscles and Parts of the Head; as the Mouth, Ears, Face, Forehead, and *Scalp*. The internal *Jugulars* ascend to the Basis of the *Cranium*, which they pass; and dividing into two Branches, the greatest goes to the *Lateral Sinus's* of the *Dura Mater*, and the least to the *Pia Mater*.

The Cava Ascendens.

THE *Cava Ascendens*, in a large Trunk, goes to the *Diaphragm*, where it receives the *Phrenic Branch*; when it has pierced the *Diaphragm*, it receives some large Branches from the Liver; and accompanying the great Artery to the fourth *Vertebra* of the Loins, it divides into the two great Branches call'd the *Iliacs*. But before this, it receives the *Renal*, *Emulgent*, *Spermatic*, and *Lumbal Veins*; and at the Angle of Division, the *Venæ Sacræ*, which go to the *Medulla* of the *Os Sacrum*.

The Iliacs.

THEN each *Iliac Vein* divides into two Branches, the *Internal* and the *External*. The *Internal* receives two Branches from the Muscles of the Thigh, and the Parts of the *Hypogastric Region*. The *External Iliac* receives the *Epigastric* and *Pudenda*, before it

Internal.

it goes out of the *Peritonæum*, and afterwards the *Musc. inferior*.

THE exterior *Iliac* now descends the *External*. Thigh and Leg, and is call'd the *Crural Vein*; and receives six Branches more, viz. the *Saphæna*, the *Ischias minor*, the *Musc. extern.* the *Poplitæa*, the *Suralis*, and the *Ischias major*; all which proceed from the several Parts of the Thigh, Leg, Feet, and Toes.

WE are now come to the third great Vein, *Of the Vena Porta.* the *Vena Porta*, which carries the Blood from the *Stomach*, *Spleen*, *Pancreas*, *Omentum*, and *Intestines*, to the Liver, for the Secretion of the Bile. As it arises out of the Liver, it receives two small Veins from the Gall-Bladder, call'd *Cysticæ Gemellæ*, one from the Stomach, call'd the right *Gastric Vein*; then advancing a little to the Left, its Trunk divides into two Branches, viz. the *Splenic* and *Mesenteric Veins*. The *Splenic Vein* receives the *Gastrica major* and *minor*; and afterwards three Branches more, from the *Omentum*, *Colon*, and *Pancreas*. Then the *Splenic Vein* divides into two Branches; the *superior*, which goes to the *Spleen*; and the *inferior*, which goes partly to the *Spleen*, the *Omentum*, and *Stomach*.

THE *Mesenteric Branch* of the *Porta* first receives the right *Gastro-Epiploic*, and *Intestinal Branch*, and some from the *Pancreas*; then it divides into three great Branches, which spread into an Infinity of other *Capillary*

lary ones, through the Duplicature and Substance of the *Mesentery*, where they are call'd the *Meseraic Veins*; and others on the *Anus* form the internal *Hæmorrhoidals*.

Of Hygrology.

HYGROLOGY is the last *Great Part* of *Anatomy*; the Province of which is to describe the *Nature* and *Kinds* of the several *Fluids* or *Humours* of the Body, which are as follow.

Of the Blood.

THE BLOOD is the most considerable and obvious of all the *Fluids* of the Body; concerning which I shall observe, (1.) That this noble and vital Stream hath its Original in the *Fætus* from *Nature's secret Operation*. (2.) That it is the *Medium* appointed by Nature for conveying of *Nourishment* to all Parts of the Body. (3.) That this Expence of the *nutritious Part* is constantly supplied, and the *Mass of Blood* renewed, by means of the *Chyle*, in the manner before mentioned. (4.) That it is found, when viewed with a *Microscope*, to consist of *small red Globules*, swimming in a thin transparent *Serum*; and that each *Globule* is made up of *six lesser ones*, which resolved assume the Nature of pellucid *Serum*, of various Colours. (5.) The *Mixture, Fluidity, Heat, and Redness* of the Blood, is only effected and preserved by the *Circulation* thereof. (6.) The *Quantity* of the Blood in the human Body is variously computed, from ten to twenty-five Pounds. (7.) That each Ventricle of the Heart will contain

contain about an Ounce of Blood, and the Heart contracting about 4000 times an Hour, there will pass through the Heart every Hour about 4000 Ounces, which is 250 lb. of Blood. (8.) That the *Velocity* of the Blood's Motion is computed to be at the rate of 52 Feet in a Minute in the great Artery; and that it is there 5233 times greater than its Velocity in the smallest *Capillaries*. (9.) The *Veins* are to the *Arteries* as 441 to 324, and therefore the Blood moves above 7116 times slower in the *Capillary Veins* than in the *Aorta*. (10.) The Blood, by a *Chymical Analysis*, yields much *Volatile Salt*; some *Phlegm* and *Sulphur*; a little *Earth*; and but little or no *fix'd Salts*. *Acids* coagulate it, but *Alcalies* dissolve in it.

THE SERUM of the Blood is a thin, *Of the Serum.* aqueous, yellowish, and somewhat saline Fluid; its Particles, when view'd with a *Microscope*, are so exceeding small, that it appears no other than an *Homogeneous Lymph*, though it is certain it consisteth of the greatest Part *Water*, a moderate Quantity of *Salt*, and a little *Sulphur*; and is of that Quality, that a small *Heat* will coagulate it. Its Use is to be a *Vehicle* to, and a *Diluter* of the pure *Blood*.

URINE is a Fluid secreted from the *Of Urine.* Blood by the *Mechanism* of the Kidneys. It consisteth, (1.) Of *Water*, in the greatest Plenty. (2.) Of a most sharp, subtile, and volatile *Salt*, nearly approaching to an *Alkali*.

cali. (3.) Of a most sharp, fine, and volatile *Oil*, nearly putrid. (4.) A most fine, volatile, and attenuated *Earth*. The *Oil* is so subtile, fetid, and attenuated, that it will intimately mix with *Water*, and cannot be easily separated; and therefore may not improperly be esteemed a *Spirit*. Its *Salt* is of a most *saponaceous Nature*, and peculiar to itself; being neither an *Acid*, *Alkali*, *Ammoniac*, or *Muriatic Salt*. The *Earth* is so fine, as to lie invisibly latent in the *Urinary Composition*; but when separated therefrom, is *scentless, tasteless, insoluble, white and fixed*.

Of Milk.

THE MILK is a Fluid separated from the Blood by the Glands of the *Breasts*. It is a Substance consisting of *Chyle*, and other smooth, oily Humours, proper to the Female Sex, and well mix'd in Circulation. The Elementary Parts of Milk are, (1.) *Water*, as is evident from its great *Serosity*, or the Quantity of *Whey* it yields in making Cheese. (2.) *Salt*, but neither *Acid* nor *Alkali*, when the Milk is new; but by Digestion it will turn very acid. (3.) *Oil*, in a very great Quantity, which rises to the Top of itself, and there makes that unctuous, butyraceous Part which is call'd *Cream*, and of which *Butter* is made. (4.) A *Spirit*. (5.) A gross, fibrous, caseous Part, which immediately *coagulates*, or turns to *Curds*, by a Mixture of *Acids*, as in making Cheese; and this Substance is capable of the Hardness of Stone, by Pressure and Evaporation of its Moisture;

Moisture; so that it is no wonder Bones made out of Milk are of that *Hardness, Strength,* and *Firmness* we find them. (6.) An *Earth*, as all Substances have; but I find no peculiar Properties mentioned of this.

MILK is but the *Chyle* a little more concocted and saturated with Salt, which renders it convertible into *Curd*; which neither *Chyle*, nor any *vegetable Emulsion* is capable of. *Milk*, therefore, is an oily vegetable Matter, circulated first in Plants, then in Animals; where, if it finds no way to pass off in its natural Form, as in the Breasts of Women it does, it turns to *Fat* in part, and partly goes off in *Sweat* and *Urine*; as is the Case in Men, who generate Milk as well as Women, tho' their Vessels are not so well disposed to separate it from the Blood.

THE Milk of several Animals differs but little, as to its *Smell, Taste,* and other Properties. The Sweetness, Virtue, and Goodness thereof, rises from the following Animals, *viz. Cows, Sheep, Goats, Mares, Asses, Women*, whose Milk is the sweetest and best of all; as that of *Cows* is the poorest.

THE *SALIVA*, or *SPITTLE*, is a *Of the Saliva,*
Liquor separated from the Blood by the *or Spittle.*
Glands of the Mouth, as related. It is an Humour diluted; pellucid; inspissible by Fire; almost devoid of *Taste* or *Smell*; yielding a tenacious Froth when shook; glandulous, as being secreted from the pure Arterial Blood; more fluid, copious, and acrid in an
N hungry

hungry Person ; very acrid, penetrating, detergent, and resolvent in those who have fasted long ; procuring and increasing Fermentation in Vegetable Meals, Juices, and Syrups : In Brutes and Men, if in Health or Sleeping, it is swallow'd ; it consists of *Water*, and much *Spirits* ; also of *Oil* and a little *Salt* mixed together in a sort of *Soap*, in some few People. In Manducation, the *Saliva* being express'd, and accurately mix'd with the attenuated Aliments, causeth (1.) That they become capable of being *assimilated* to the Body in *Nutrition*. (2.) A Mixture of *oily* with the *aqueous Parts*. (3.) A Solution of the *Saline*. (4.) Fermentation. (5.) An Alteration of *Taste* and *Smell*. (6.) The Excitation of an Intestine Motion. (7.) Momentaneous Refection ; and (8.) A Relish of Things in themselves insipid. Such is the Nature and Use of this most necessary Humour.

Of the Pancreatic Juice.

THE *PANCREATIC JUICE* is secern'd by the Glands of the Sweet-Bread, from the Blood brought thither by the *Cæliac Arteries*. It is made copiously and constantly ; is clear and limpid ; is almost insipid, or a little saltish ; it is neither *acid* nor *alkaline* ; is most of all like *Spittle* in its Rise, Vessels, and Effects. The Use of it (as before said) is to dilute the *Chyle*, and render it miscible with the *Blood*, to adapt it for its Passage through the *Lacteals* ; to mollify and sooth Acrimonies ; to alter the Viscidity, Bitterness, and Colour of the *Bile*, and to mix

mix it thoroughly with the *Chyle*; and lastly, to alter and change the Tastes, Odours, and particular Qualities of the *Aliments*; so that they become almost of one Nature, and make a more *Homogeneous Mixture* for the Blood.

THE *BILE* is secreted from the Blood by the Liver; and is of two Kinds, as has been taken notice of: The first is call'd the *Cystic* or *Vesicular Bile*; and vulgarly the *Gall*, which is collected in a Bladder. This is a kind of inimitable liquid *Soap*, consisting of a very subtile, animal *Oil*, mixed up with an exceeding volatile *Salt*, whose solutive Power manifests itself, by rendering Oils dissolvable in Water; also it dissolves, attenuates, and renders homogeneous, Rosins, Gums, and such tenacious Bodies. It is neither *acid* nor *alkaline*; but is a sort of saponaceous Composition of *Oil*, *Salt*, and much *Spirit* diluted with *Water*; is not inflammable, unless first dried; and is the *sharpest* of all the Humours of the Body.

*Of the Gall
and Bile.*

THE second sort is called the *Hepatic Bile*, and is of a different Taste, Smell, Colour, and Consistency, from that in the *Gall-Bladder*, as being thinner, more pellucid, of a lighter Yellow, and less bitter and acrid, says the Great *Boerhaave*; but Dr. *Keill* asserts the contrary, from an Experiment of *Malpighius*. The Use of the *Bile* is to sheath or blunt the Acids of the *Chyle*, because they being intangled so in its *Sulphurs*,

thicken too much to be sufficiently diluted with the *Pancreatic Juice*; this appears, because great Quantities of *acid Salts* have been observ'd among the *Aliments* in the *Stomach*; but none can be found in the *Chyle*, after it has pass'd the *Duodenum*.

Of the Lympha

LYMPHA, or **LYMPH**; is the most clear, limpid, depurated, aqueous Part of the Blood, abounding with *volatile Salt*, *Spirits*, *Sulphur*, and *Water*; various are the Glands which secrete it from the Blood and the Vessels (call'd *Lymphæ-duets*) which carry it to the *Chyliferous Ducts*; it is the ultimate Diluter of the *Chyle*, and gives it its proper and requisite Consistence to enter, mix, and circulate with the Blood, and to be convertible into the same. It is thinner and clearer than *Spittle*, and more aqueous than *Serum*; for if it be set in a Spoon in the Cool, it will not turn to a *Jelly* like that.

Of the Semen.

THE SEMEN, or **SEED** of Males, is a Thing of a delicate Nature, and is thus generated: The Blood being carried from the Emulgent Arteries by the *Vasa Præparantia*, through long anfractuous Windings and Circumvolutions, to the *Epididymis* and Substance of the *Testicles*, where the *Seminal Part* is secern'd by the proper glandulous Substance of those two Bodies, and is call'd the *Semen*, or *Seed*; it is farther perfected in the sinuous Cells of the *Vesiculæ Seminales*, and is ultimately elaborated as it passes thro' the

the Glands of the *Prostata*, at the Time of *Coition*. If this Humour be view'd with the best Microscopes, when recent and diluted with a little warm Water, it will appear to consist of innumerable, small, oblong, living Creatures, like Tad-poles, or little Eels, swimming in the other Part of this Humour; and this not only in the *Human Sperm*, but that of *Quadrupedes*, *Birds*, *Fish*, *Insects*, &c. and that at all Times. These *Animalcules* are so small, that it is computed 3000000000, i.e. *Three Thousand Millions* of them are not equal to a Grain of Sand, whose Diameter is but the hundredth Part of an Inch. These Animals are now by all very probably supposed to be the original *Stamen*, or Rudiments of the future Body, whether of Men, or other Animals. The Part of the *Semen* in which these small Creatures swim, is a smooth, viscous, inactive Humour, most different from the Nature of Animal Spirits, an oily volatile Salt, a hot and fermented Liquor, as it has been formerly supposed to be.

THE *ANIMAL SPIRITS* are sup- *Of the Animal
Spirits.*
posed to be separated from the Blood in the medullary Substance of the Brain, whence they pervade and glide through the fine invisible Canals of the *Nerves*. This fine Fluid contains nothing of a Salt or Oily Nature, nor can it be compared with the vegetable Spirits of Plants; but most properly and aptly to a most subtile Water, which, with respect to its Miscibility, Mobility, Solidity,

lidity, Smoothness, Simplicity, and want of Elasticity, is like to the *Animal Spirits*, or *nervous Juice*. It is produced in very great Plenty, and that constantly, and in an equable manner. The *Animal Spirits* are, by a modern *Hypothesis*, made the immediate *Organ* of all general *Sensation* and *Nutrition*; but some are apt to think, that *Nutrition* may as rationally be accounted for on other Principles, together with some other Actions of the Body, without pressing those *Ideal Agents* into the Service.

Of Sweat, and
insensible Per-
spiration.

SWEAT is that fine, clear *Lympha*, or Humour, which insensibly transudes thro' the Pores of the Skin, being excern'd from the Blood in the *Capillaries*, by the *Miliary Glands* of the Skin; the Smallness and great Number of those *Glands*, and their *Spiracles*, I have already taken notice of. The Parts of this perspirable Matter, or Sweat, are, (1.) *Water*, the common Vehicle of most Humours. (2.) An highly exalted Oil; and hence the disagreeable Smell of Sweat. (3.) A great Quantity of Salt, as is evident from its *Saccharo-saline Taste*. (4.) A terrestrial and recrementitious Matter, of the most subtile sort; for though the more gross Parts of the superfluous Aliments go off the Body by Stool and Urine, yet the more fine, subtile, and attenuated Part goes constantly off by insensible Perspiration. And what is more, this latter is the greatest Discharge that is made from the Body. For

Sancto-

Sanctorius, the first Inventor hereof, found by repeated Experiments, that in *Italy*, from a youthful, growing, healthy, and temperate Body, there constantly went off by insensible Transpiration, thro' the Pores of the Skin, and by the Breath, about five Parts of eight of the Aliments, and therefore much more than all the other Excretions of the Body put together. He farther observ'd, that this Perspiration was at the rate of about fifty Ounces a Day, and upwards. So that supposing a Man's Body to weigh 160 *lb.* then in fifty-one Days we perspire a Quantity equal to the Weight of the whole Body. Nor is this so much to be wonder'd at, if we consider that 125000 Pores are equal to but one Grain of Sand; that 100 such Grains make one Inch, and 10000 of them one square Inch; and allowing 14 square Feet, or 2016 square Inches equal to the Superficies of a middle-siz'd Body, it will follow, that there will be 2520000000000, i. e. *Two Millions Five Hundred and Twenty Thousand Millions* of Pores in such a Body, through which it constantly perspires. This Humidity is various, according to the Variety of the Air, Soil, Sex, Age, Disposition, Diet, Action, Time, &c. and is always very little in a sound Body. This subtile Matter makes a continual *Atmosphere* about the Bodies of Animals, tho' invisible to the naked Eye.

F I N I S.



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THE
EXPLANATION
OF THE
PLATES.

PLATE I.

Fig. I. **I**S the Skull of a *Fœtus*, of nine Months, in its natural Size.

- A. A. The two *Frontal Bones*, which unite in *Adults*.
- B. The *Fontanella*, which is also lost in that Union.
- C. The *Superciliary Ridge*.
- D. The Hole for the *Ophthalmic Branch* of the fifth Pair of Nerves.
- E. The *Orbital Process* of that *Frontal Bone*.
- F. The *Os Parietale*.

O

G. The

G. The anterior Part thereof, which reaches over the Temporal Process of the *Sphenoide Bone*.

H. The *Os Squamosum*.

I. Its *Zygomatic Process*.

K. Part of the *Os Petrosum*.

L. The *Temporal Process* of the *Sphenoide Bone*.

M. *Os Nasi*, or Bone of the Nose.

N. *Os Unguis*.

O. *Os Malæ*, or Cheek-Bone.

P. The Upper *Jaw-Bone*.

Q. Its *Nasal Process*.

R. Its *Oricular Process*.

S. The Hole call'd *Orbiter externus*.

Fig. II. Represents the Basis of the Skull of a full-grown *Fætus*.

A. A. The *Palate Processes* of the Upper *Jaw-Bones*.

B. A *Suture* that runs across the Fore-part of the *Palate*.

1. 2. 3. } The *Cavities* in which the Teeth are contain'd in
4. 5. } their Bags.

6. The Hind-part of the *Vomer*.

C. C. The *Bones* of the *Palate*.

D. The *Pterygoide Process* of the *Sphenoide Bone*.

E. The Hook of its inner *Ala*, or *Wing*.

F. Part of the Body of the *Sphenoide Bone*.

G. Part of the *Os Parietale*.

H. The *Fissure*, through which passes the *Chorda Tympani*.

I. The *Zygomatic Process* of the *Os Squamosum*.

7. The same-named *Process* of the *Os Malæ*.

K. The *Cartilage* at the End of the *Os Petrosum*.

L. The Part of the *Os Petrosum*, on which afterward grows the *Mastoide Process*.

M. The first *Bone* of the *Occiput*.

N. N. The *Cartilages* joining it to the second and third *Bones* of the *Occiput*.

O. O.

P. P. The

P. P. The second and third Bones of the *Occiput*.

Q. The fourth Bone thereof.

R. R. The Cartilages which join the *Occipital* Bones to the Hinder-part of the *Os Petrosum*.

S. S. Two triangular Bones, or *Ossa Triquetra*.

V. The Entrance of the *Carotide* Artery in the *Os Petrosum*.

W. Its Exit out of the same Bone.

X. The Entrance of the *Tuba Eustachiana* into the anterior Part of the Cavity of the *Tympany*.

Y. Z. The two Ends of the *Os annulare*, or circular Bone.

Fig. III. Shews the *Os Frontis*, or Frontal Bone of a *Fætus* of four Months after Conception, a little magnified, the better to shew its *Texture*.

Fig. IV. The *Frontal Bone* of a *Fætus* between three and four Months.

Fig. V. An *Os Parietale* of a *Fætus* of a little more than six Months.

F. The Rising in its Middle, perfectly smooth, and whence the Fibres shoot like *Radii*.

Fig. VI. An *Os Parietale* of a *Fætus* of four Months, a little magnified, as Fig. III.

Fig. VII. Another of a *Fætus* of two Months.

Fig. VIII. The Inside of the first Bone of a full-grown *Fœtal Occiput*.

M. The Slit at its superior Angle.

N. N. The Notches at its Lateral Angles.

O. A *Groove* from the Bottom of the Upper Slit to the Middle of the Bone.

Fig. IX. Is an external View of a *Temporal Bone* of a full-grown *Fætus*.

H. The *Os Squamosum*.

I. The Root of the *Zygomatic Process*.

K. The Cartilage surrounding.

L. The Hinder-part of the *Os Petrosum*.

M. The Membrane which covers the *Membrana Tympani*, peculiar to the *Fœtus*.

N. The *Membrana Tympani*.

O.O.O. The *Annulus*.

Fig. X. An *inside View* of the same Bone.

H. The *Os Squamosum*.

I. I. The Ridge by which the *Squamosum* is joined to the *Petrosum*.

L. A small Hole, seldom, if ever, seen in Adults.

M. A Ridge made by the super. semicircular Canal.

N. The large Hole under that Ridge.

O. The *Meatus Auditorius internus*.

P. The sharp Ridge running from the super. semicircular Canal to the End of the Bone.

Q. The Cavity for the lateral *Sinus* of the *Dura Mater*.

R. A small Hole, amidst several others, not seen in *Adults*.

S. The Opening of the *Fallopian Canal*.

Fig. XI. Is a View of the Cavity of the *Tympany* of a full-grown *Fœtus*, with the Bones of the Ear in their natural Site.

A. The long and slender Process of the *Malleus* in its natural Situation.

B. The Connection of the Heads of the *Malleus* and *Incus*.

C. The *Foramen rotundum*.

Fig. XII. An Inside-View of the *Os Squamosum* of a full-grown *Fœtus*, with the *Annulus*, *Malleus*, and *Incus*, and a part of the *Os Petrosum*.

A. The Inside of the *Membrana Tympani*.

I. I. The Ridge made by the Juncture of the *Os Squamosum* and *Petrosum*.

L. A small Hole peculiar to *Fœtus's*.

M. Part of the *Os Squamosum*, making the upper and external Side of the *Tympanum*.

Fig. XIII. A View of the Inside of the *Sphenoide Bone* of a full-grown *Fœtus*,

B. B. Its

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B. B. Its great *Alæ*, or Wings.

C. The Cartilage by which it joins the fourth Bone of the *Occiput*.

D. D. The posterior *Clinoid* Process, entirely cartilaginous.

E. The *Sella Turcica*.

F. F. The anterior *Clinoid* Process, wholly Bone.

G. G. The little *Alæ*, or Wings.

H. The Notch, receiving Part of the *Crista Galli*.

I. I. The lateral Processes of the Body of the *Sphenoid* Bone, to which the great Wings are fix'd.

Fig. XIV. A View of the external Side of the *Sphenoid* Bone.

A. The Body of the said Bone.

B. B. Its great Wings, or *Processus Pterygoides*.

C. The Cartilage at the End of the Body.

D. Its *Azygos* Process.

E. The *Temporal* Process of the Great Wing.

F. The *Orbital* Process.

Fig. XV. Is Part of the *Os Ethmoides*, cartilaginous, and the *Vomer* bony.

A. The *Septum Nasi*.

B. The *Crista Galli*.

C. One Side of the *Vomer*.

D. The Bottom of the *Vomer*, by which it joins the Bones of the *Upper Jaw* and *Palate*.

Fig. XVI. Represents one of the external Sides of the *Nares* or *Nostrils*.

A. B. B. The superior *spongy* Bones.

C. The Inside of the *Os Nasi*, or *Nasal* Bone.

D. The inferior *Os Spongiosum*, or *spongy* Bone.

E. Part of the *Upper Jaw-Bone*.

Fig. XVII. Represents the external Side of an *Upper Jaw-Bone* and *Palate-Bone* of a full-grown *Fœtus*.

A. The *Nasal* Process of the *Os Maxillare*.

B. Its *orbital* Process.

C. The Cavity in which part of the *Os Mala* is fix'd.

D. The *orbital* Process of the *Palate Bone*.

Fig. XVIII.

Fig. XVIII. The internal View of the same Bones.

- A. The Inside of the Nasal Process of the *Os Maxillare*.
- B. The Passage of the Lachrymal Duct into the *Nares*.
- C. The Process by which this Bone is connected to its Fellow.
- E. E. E. Parts of the Side and Bottom of the *Nares* form'd by this Jaw-Bone.
- D. The *Antrum* of *Highbmore*.
- F. The orbital Process of the Palate-Bone.
- G. That Part of the *Os Palati* which makes the Hinder-part of the *Nares*.
- H. The End of the *Lamella* of the Jaw-Bone, under which slides part of the Palate-Bone.

Fig. XIX. The *Os Hyoides* of a full-grown *Fœtus*.

- A. A. Its Horns, and their Ossifications.
- B. Its Body, and its Ossification.
- C. C. The Articulation of its Horns to its Body.

Fig. XX. The same Bone, and its Ossification (a) of a *Fœtus* of eight Months.

Fig. XXI. Another of a *Fœtus* of four Months.

Fig. XXII. The *Sternum* or Breast-Bone of a *Fœtus* of six or seven Months.

1. 2. 3. 4. Ossifications of different Magnitude.

- D. The *Processus Ensiformis*.

Fig. XXIII. Represents the *Os Innominatum* of a full-grown *Fœtus*.

- A. The *Os Ilium*.
- B. The *Os Pubis*.
- C. The *Os Ischium*.
- D. D. The cartilaginous Extremity of the *Ilium*.
- E. The Cartilage which joins the *Ilium* to the Top of the *Acetabulum*.
- F. The Cartilage which joins the *Os Pubis* and *Ischium* together.
- G. The *Acetabulum*.

Fig. XXIV.

Fig. XXIV Represents the Bones of the Foot of a full-grown *Fœtus* in their natural Situation.

1. 2. 3. 4. } The Bones of the *Tarsus*.
5. 6. 7. }

A. B. The two *Epiphyses* of a *metatarsal* Bone.

C. The Body of that Bone.

D. E. The *Epiphyses* of the two first Bones of the Little Toe.

F. The last Part of that Toe, but very little ossified.

G. H. The two Bones of the Great Toe.

Fig. XXV. Represents the *Os Femoris*, or Thigh-Bone, and the two Bones of the Leg, viz. *Tibia* and *Fibula*, of a full-grown *Fœtus* slit.

A. A. B. B. Shew the Difference between the Substance of the Extremities of these Bones and their middle Parts.

C. C. C. C. The Vessels entering the Ossification F.

D. A small Ossification.

E. Several small Vessels entering a small red Speck, in which Dr. *Nesbitt* (the Author of the Figures of this Plate) thought he felt bony Particles.

G. A large Ossification.

Fig. XXVI Is a Section of an *Epiphysis* of the Thigh-Bone just before the bony Particles become visible in it.

Fig. XXVII A Section of an *Epiphysis* of the *Tibia* just after the Ossification becomes visible at *a*.

Fig. XXVIII Another Section of an *Epiphysis*, in which the Ossification is increas'd, and various Vessels appear ending in red Specks at *a. a*.

Fig. XXIX. Another, in which the Ossification is much increased.

Fig. XXX. Another Section, in which a very considerable Inflammation appears round the Ossification.

Fig. XXXI The *Os Calcis*, or Bone of the Heel, of a full-grown *Fœtus* slit.

Fig. XXXII.

Fig. XXXII. The Cartilage of an *Astragalus*, which had been macerated in Water, slit, to shew the Manner in which the Bone *a* slips out of the cartilaginous Cavity *b*.

Fig. XXXIII. The Bones of a Great Toe of a full-grown *Fœtus* slit, with part of the Ligament of the Joint at the Bottom of the first Bone, in which are contained two *Ossa Sefamoidea*, a. a.

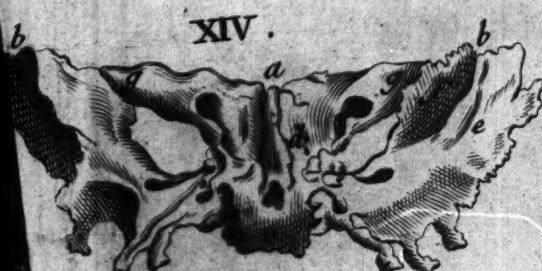
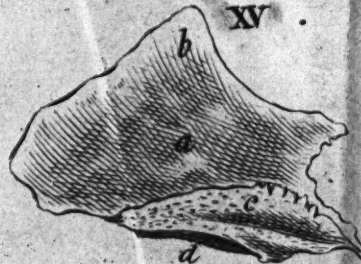
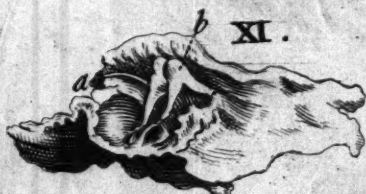
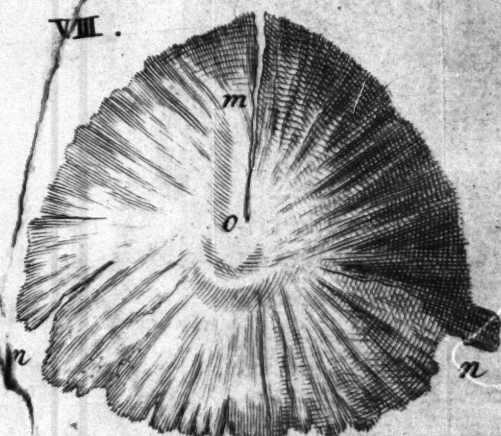
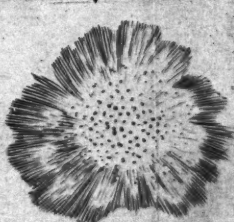
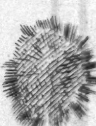
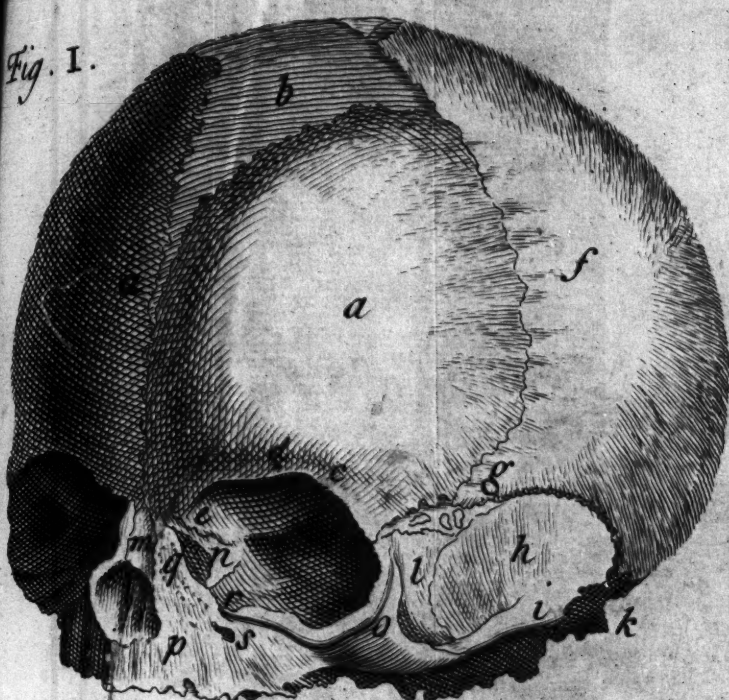
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Fig. I.



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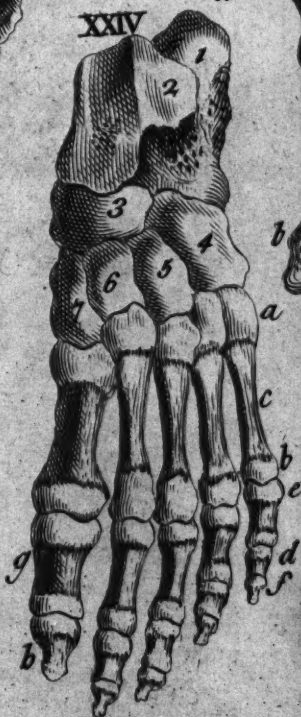
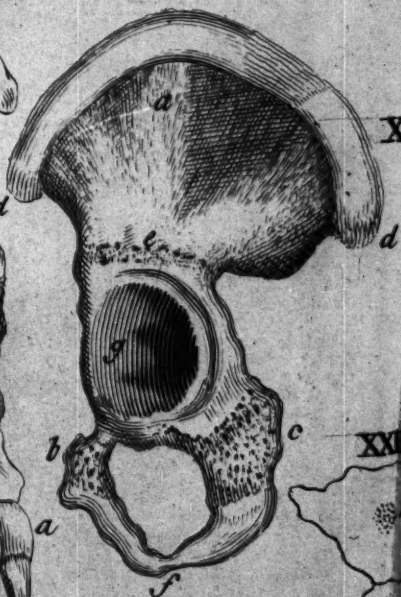
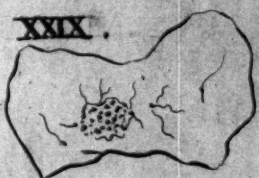
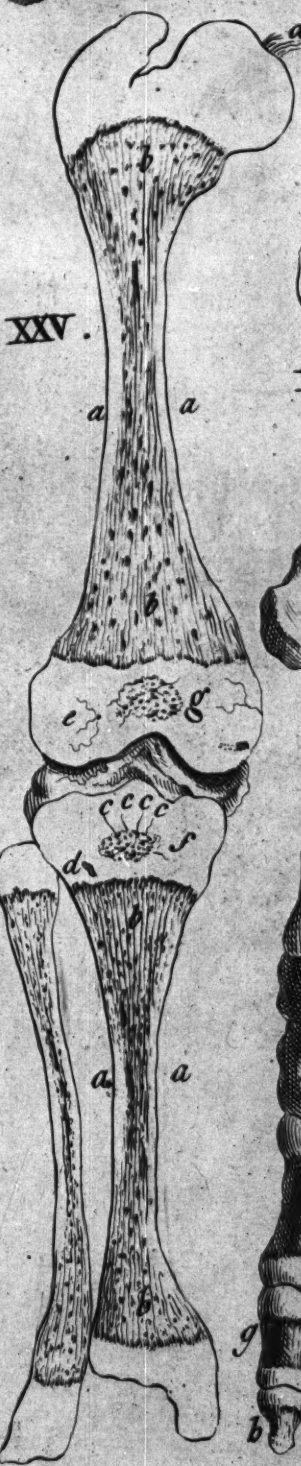
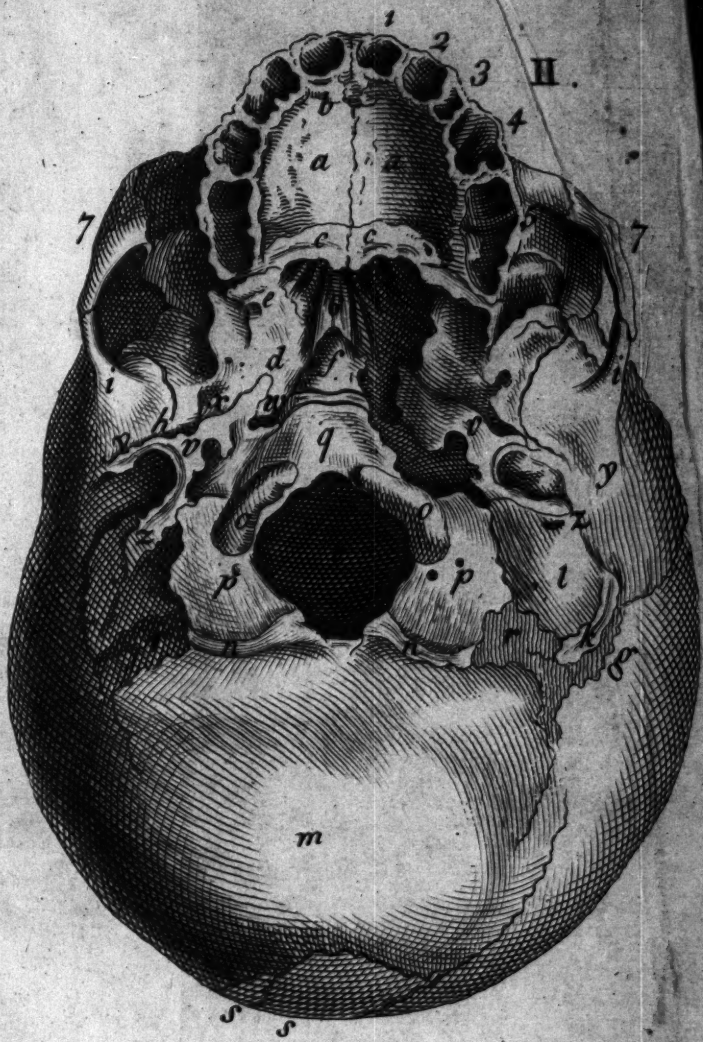
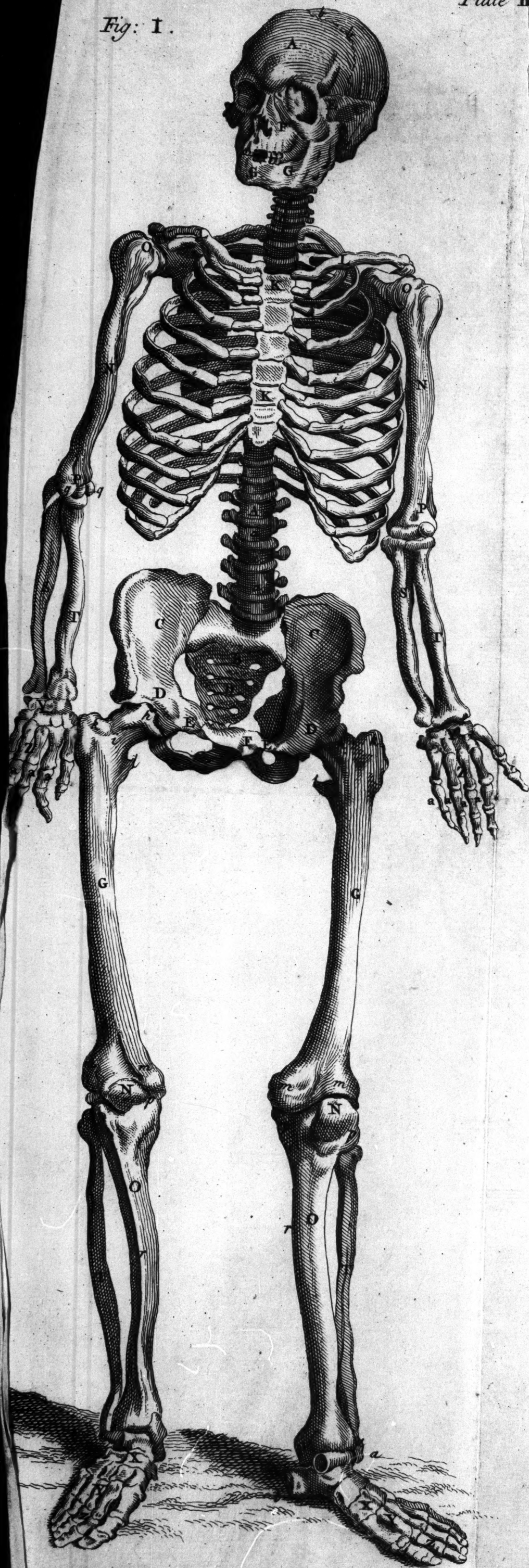


Fig: I.



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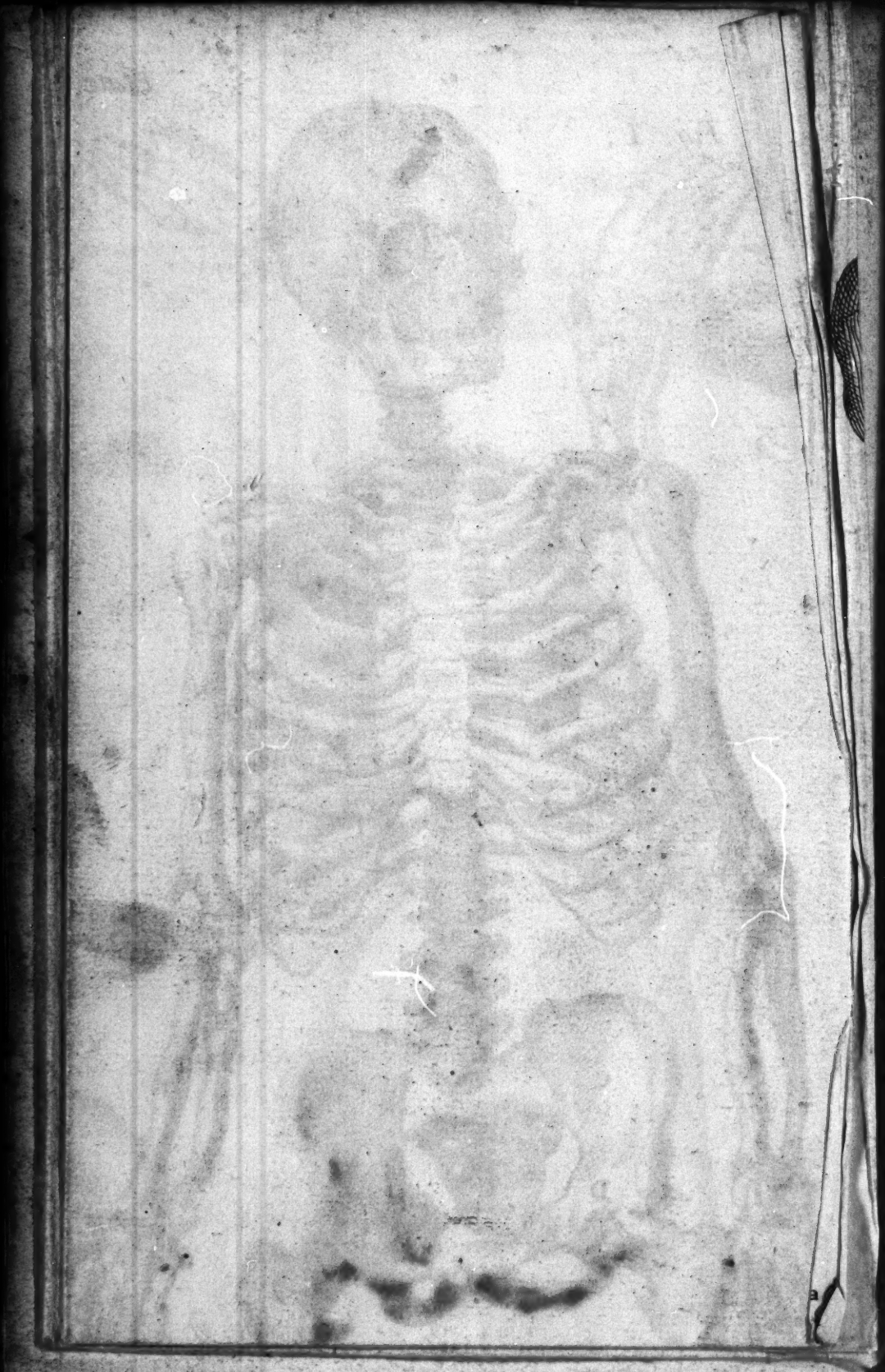


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a.
A.a.

Fig. I. **E**Xhibits a View of an human Sceleton of an adult Body, whereby the Texture, Connection, and Situation of all the Parts in the whole Compages appear as in their natural State.

- A. The *Os Frontis*, or Forehead-Bone.
- b. b. The Coronal Suture.
- C. The *Os Temporis*, or Bone of the Temple.
- d. The *Mammillary Process* thereof.
- E. The *Os Jugale*, or Yoke-Bone.
- F. The Upper Jaw-Bone.
- G. G. The Lower Jaw-Bone.
- b. b. b. The *Vertebrae* of the Neck.
- i. i. i. The Ribs.
- K. K. The *Os Sternum*, or Breast-Bone.
- L. L. The *Clavicles*, or Collar-Bones.
- M. M. The internal Sides of the *Scapulae*, or Blade-Bones.
- N. N. The *Os Humeri*, or Shoulder-Bone.
- O. O. The Head thereof articulated into the Shoulder.
- P. P. Its lower End articulated into the *Radius* and *Ulna*.
- q. q. The internal *Apophyses*.
- r. r. The external ones.
- S. S. The Bone of the Cubit call'd the *Ulna*.
- T. T. The other call'd the *Radius*, or Wrist-Bone.
- V. V. The Process of the *Ulna*, call'd *Alecranon*.
- Y. Y. The *Carpus*, or Wrist, of eight small Bones.
- z. z. The *Metacarpus*, or Back of the Hand.
- a. a. a. a. The *Phalanges*, or Bones of the Fingers,

The Lower Part of the Sceleton.

- A. a. a. a. a. The five *Vertebrae* of the Loins.
- B. B. The internal Side of the *Os Sacrum*.
- C. C. The Cavity of the *Os Ilium*.
- D. D. The *Os Coxendix* with its *Acetabulum*.

P

E. E. The

E. E. The *Os Pubis*, with its Holes.

F. The Connection of the *Offa Pubis* by means of a Cartilage.

G. G. The Thigh-Bone.

b. b. Its round Head, or *Epiphysis*, articulated to the *Acetabulum*.

i. i. Its *Cervix*, or Neck.

k. k. Its external Process, call'd the *Trochanter major*.

l. l. Its internal Process call'd the *Trochanter minor*.

m. m. The lower Heads, or *Apophyyses* of the Thigh-Bone.

N. N. The *Patella*, or Knee-Pan.

O. O. The *Tibia*, or Great Bone of the Leg.

p. p. The two Upper *Sinus's* thereof.

r. r. The Part of it call'd the Spine.

f. f. Its lower Process making the inner Ankle.

T. T. The other Bone of the Leg call'd *Tibula*, or *Perone*.

u. u. Its inferior Part making the outer Ankle.

X. X. The seven Bones of the *Tarsus*, or Instep.

Y. Y. The five Bones of the *Metatarsus*.

z. z. The Bones of the Toes.

a. The Bone call'd the *Astragal*.

b. The *Calx*, or Heel-Bone.

Fig. II. Exhibits a View of the external and upper Part of the Skull.

A. A. A. The *Coronal Suture*.

B. B. The *Sagittal Suture*.

C. C. The *Lambdoidal Suture*.

D. The *Os Frontis*, or Forehead-Bone.

E. E. The Bones of the *Sinciput*.

F. F. Part of the Bone of the *Occiput*.

Fig. III. Exhibits the anterior and side View of the whole Skull.

A. A. The *Coronal Suture*.

B. Part of the *Sagittal Suture*.

C. C. The *Squamous Suture* of the Temporal Bones.

D. The

- D. The *Os Frontis*, or Forehead-Bone.
 - E. E. Its Process at the Great *Cantbus* of the Eye.
 - F. Its other Process at the lesser *Cantbus*.
 - G. A Hole for the Exit of the Nerves.
 - H. An *Os Bregmatis*, or Bone of the *Sinciput*.
 - I. An *Os Temporum*, or Temple-Bone.
 - K. Its *Appendix Styloides*.
 - L. Its *Mammillary* Process.
 - M. Its *Zygomatic* Process.
 - N. The first Bone of the Upper Jaw.
 - O. The second Bone thereof.
 - P. Its Hole, on which lies the *Lachrymal* Gland.
 - Q. Q. The third Bone of the Upper-Jaw.
 - R. R. Its fourth Bone.
 - S. The *Septum Narium*, or Partition of the Nostrils.
 - T. The Lower Jaw-Bone.
 - u. Its external lesser Perforation.
 - X. Its Process call'd *Corone*.
 - Z. Its other call'd the *Condylode* Process.
 - a. a. The *Dentes Incisores*, or sharp Teeth.
 - b. b. The *Dentes Canini*, or Dog-Teeth.
 - d. d. d. d. The *Dentes Molares*, or Grinders.
- Fig. IV. Is a View of the internal and lower Part or Basis of the Skull.
- A.A.A.A. The Section of the Skull, shewing its *Lamellæ* and *Meditullary* Substance between.
 - B. The Hole leading to the Cavity of the Nose.
 - C. C. The *Os Cribriforme* perforated with many Holes.
 - D. The Process call'd *Crista Galli*.
 - E. E. The two *anterior Clinode* Processes of the *Os Sphenoides*.
 - F. F. The two *posterior* ones.
 - G. G. The Holes for the Egress of the Optic Nerves.
 - H. The *Sella Turcica*, on which lies the *Pituitary* Gland.
 - I. The *Sinus*, on which the Optic Nerves unite.

K. K. } The Holes of the *Os Sphenoides* for the Passage of
 L. L. } Vessels.
 M. M. }

N. N. The *Os Petrosum*.

O. O. The Holes therein for the Egress of the Auditory Nerves.

P. P. The Part of the *Os Occipitis* joining the *Sphenoides*.

Q. The great Hole of the *Occipital Bone*, through which passes the Spinal Marrow.

R. R. The large *Sinus's* of the *Occiput*, containing the *Cerebellum*.

Fig. V. Exhibits a View of the exterior Face of the Basis of the Scull.

A. A. The *5th* Bone of the Upper-Jaw, making the Palate.

B. The *Os Jugale*, or Jugal Bone.

C. C. The Great Holes by which the Nostrils open into the Mouth.

D. The *Septum Narium*.

E. The Bone call'd the *Vomer*.

F. F. The *Pterygoide* or *Aliforme* Processes of the *Os Sphenoides*.

g. g. The Cavities of those Processes.

H. H. The *Temporal Sinus* receiving the *Condylode* Process of the Lower Jaw-Bone.

I. The Part of the *Occipital Bone*, as before in *p. p.*

K. K. The *Appendices Styloides* of the Temp. Bones.

L. L. The *Mammillary* Processes thereof.

M. M. The two Processes of the *Occipital Bone*, to which the first *Vertebrae* of the Neck is articulated.

N. The *Foramen Magnum*, or Great Hole, as before in *q.*

O. O. The two protuberant Sides of the *Occipital Bone*.

Fig. I. **E**Xhibits a View of the Ear, and its Bones, &c.

- A. C. The *Auditory Tube*, or *Meatus Auditorius*, which at
 - A. Is cartilaginous, but afterward bony.
 - F. The *Membrana Tympani*, or Head of the Drum.
 - D. A *Sinus*, in which rests the sharp End of the little Bone.
- B. P. The *Anvil*, or *Incus*.
- C. S. The *Stirrup*, or *Stapes*.
- H. The Aperture of the Tube,
- H. G. I, Which is terminated in the Roof of the Mouth at
 - I, By which means the Air of the Mouth has a Communication with the Drum of the Ear.
- E. O. Is a Branch of a Nerve, call'd *Chorda Tympani*, or String of the Drum.
- K. Is the external Hollow of the Ear call'd *Concha*.
- L. L. The Circumference of the external Ear.

Fig. II. A View of the Cavity of the Ear call'd the *Labyrinth*;

- 1. 2. 3. Are three semicircular Tubes or Canals.
- 4. The *Cochlea*, or Snail.
- o. The *Fenestra Ovalis*.
- p. The *Fenestra Rotunda*.

Fig. III. Exhibits the Labyrinthal Canals opening into the Cavity call'd the *Vestibulum*.

- 1. 2. 3. The Semicircular Tubes of the *Labyrinth*, as before.
- 4. The *Cochlea*.
- 5. The Union of the first and second Tube.
- 6. The Tube arising from that Union.
- q. The *Fenestra Ovalis*, and
- r. The *Fenestra Rotunda*, both seen together with the Apertures of the Labyrinthal Tubes in the *Vestibulum*.

Fig. IV. Is a View of the whole Structure of the Ear, and its Parts subservient to the Office thereof.

A. A. The

- A. A. The external Ear, which gathers Sounds.
 B. The *Concha*, or Shell which receives it.
 C. C. The *Meatus Auditorius*, which leads to
 O. The Drum-Head, or *Membrana Tympani*.

c. 7. The *Chorda Tympani*.

m. The *Incus*, or Anvil.

n. The *Malleolus*, or Hammer.

p. The *Stapes*, or Stirrup.

1. 2. 3. The Tubes of the *Labyrinth*.

4. The *Vestibulum*, or Porch.

5. The *Cochlea*, or Snail-Shell-like Cavity.

6. The Auditory Nerve, which enters by the *Vestibulum* thro' five Orifices into the *Labyrinth*.

H. I. The Tube call'd *Eustachius's* Trumpet.

e. d. A small Muscle in that Tube, which moves the Hammer.

f. f. Another Muscle, which, with the other, serves to open the Tube for the Passage of Air.

g. A little Muscle inserted into the Head of the Stirrup, to give it proper Motion for Hearing.

Fig. V. Shews the Auditory Bones of the Ear, as follows.

C. S. The *Malleus*, or Hammer.

B. P. The *Incus*, or Anvil.

P. V. The *Stapes*, or Stirrup.

P. A small roundish Bone between the Anvil and Stirrup, which makes the fourth in Number.

Fig. VI. A. A. The anterior Face of the first *Vertebra* of the Neck, call'd *Atlas*.

B. The Hole by which the Spinal Marrow descends.

C. C. Its transverse or lateral Processes.

d. d. The lateral Holes by which the Arteries ascend to the Brain.

E. E. The two *Sinus's*, to which the *Occipital* Bone is articulated.

Fig. VII. A. A. The hinder Face of the second *Vertebra* of Neck.

B. Its Appendix, or *Dentiforme* Process.

C. The

P L A T E III.

III

C. The hinder Process thereof cloven into two, for the more convenient Insertion of the Muscles and Ligaments.

Fig. VIII. A. A. The hinder View of a *Vertebra* of the Back.

B. Its upper Surface full of small Holes.

C. C. The transverse Processes thereof.

D. Its posterior Process, or Spine.

Fig. IX. A. A. The Body of a *Vertebra* of the Loins,

B. Its upper Superficies lined with a Cartilage.

C. The Hole for the Passage of the Marrow.

D. D. Its lateral Processes.

E. Its posterior Process, or Spine.

I. I. Its oblique Processes.

Fig. X. A. A. A. The hinder View of the *Os Sacrum*, with its Gibbosities and Asperities.

B. The Hole for the Marrow.

C. C. Its oblique Processes.

d. d. d. Its hinder Processes.

e. e. e. e. Its Holes for the Exit of the Nerves.

f. f. f. f. Its hinder and inferior Process cloven into two.

Fig. XI. The *Os Coccygis*, consisting of four little Bones or Cartilages.

Fig. XII. Shews the *Os Innominatum*.

A. A. A. That Part thereof call'd the *Os Ilium*.

b. b. b. Its Spine.

C. The Back thereof.

D. D. D. The *Os Pubis*.

E. The Great Hole.

F. F. F. The *Os Ischium*, or *Coxendix*.

G. The *Acetabulum*.

b. b. Its Superciliary Border or Ridge.

I. The Appendix of the *Os Ischium*.

Fig. XIII. A. A. A. The *Vertebrae* of the Back.

B. B. B. The Ribs.

C. C. C. C. The *Sinus's* on the lower Parts thereof.

D. D. The *Tubercles* by which they are articulated.

E. The *Sinus* of the *Vertebra*.

F. The

F. The transverse Process of the *Vertebra*.

G. The lowest Rib, having only a single Tubercle.

Fig. XIV. A. The Clavicle, or Collar-Bone.

b. Its Head, joining the *Sternum*.

c. Its other End joining the *Scapula*.

D. The *Scapula*, or Blade-Bone.

E. Its Process, call'd *Acromion*.

F. The less inferior Process, call'd *Coracoides*.

G. The short Process call'd *collum*, the Neck.

b. b. The Basis of the *Scapula*.

i. k. The superior and inferior Angles or Corners thereof.

Fig. XV. Shews the Muscles of the Head and Face.

A. The *Pericranium*.

B. The *Periosteum*.

C. The Hairy Scalp.

D. The Skull laid bare.

E. The Temporal Muscle.

F. The superior Muscle of the Ear.

G. The Muscle of the *Occiput*, reaching to the hinder Muscles of the Ear.

H. The Muscle of the Forehead.

I. Its Appendix extended along the Ridge of the Nose.

K. The *orbicular* Muscle of the Eye.

L. The *triangular* Muscle of the Nose.

M. The common Attollent Muscle of the Lips.

N. The first proper Muscle of the Upper Lip.

O. The second of the same.

P. The Muscle call'd *Buccinator*.

Q. The *Masseter*.

R. The common depressing Muscle of the Lips.

S. The mental Muscle of the Lower Lip.

T. T. The third common orbicular Muscle of the Lips.

V. The circular Muscle of the Nose.

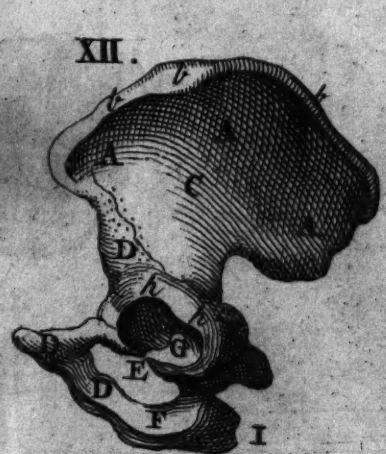
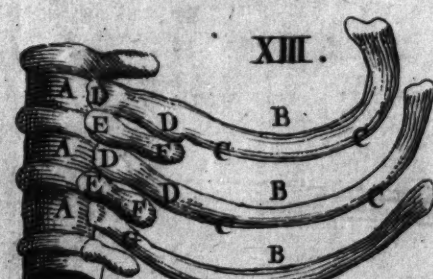
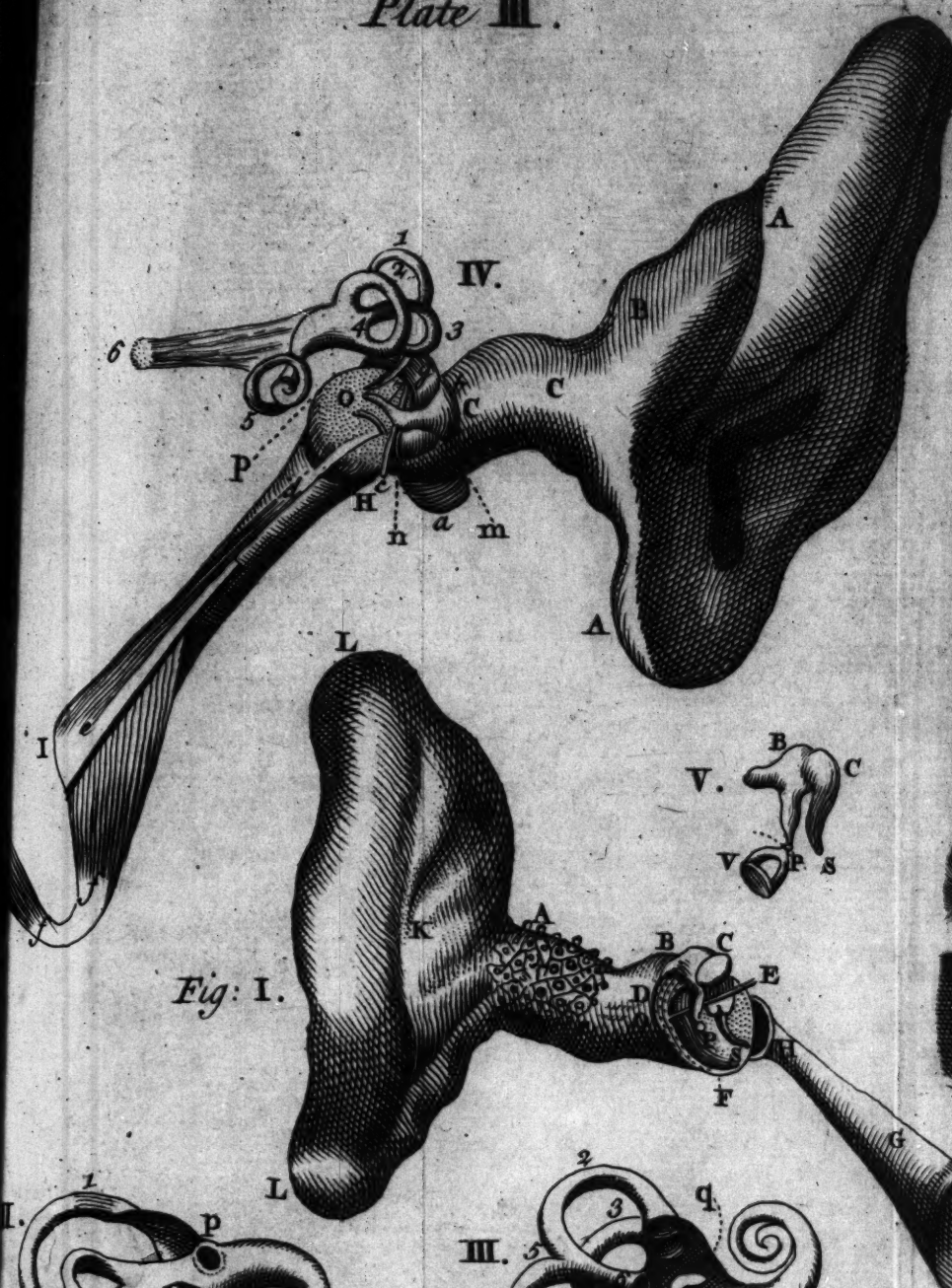
X. X. X. The Rim of the Ear, call'd *Helix*.

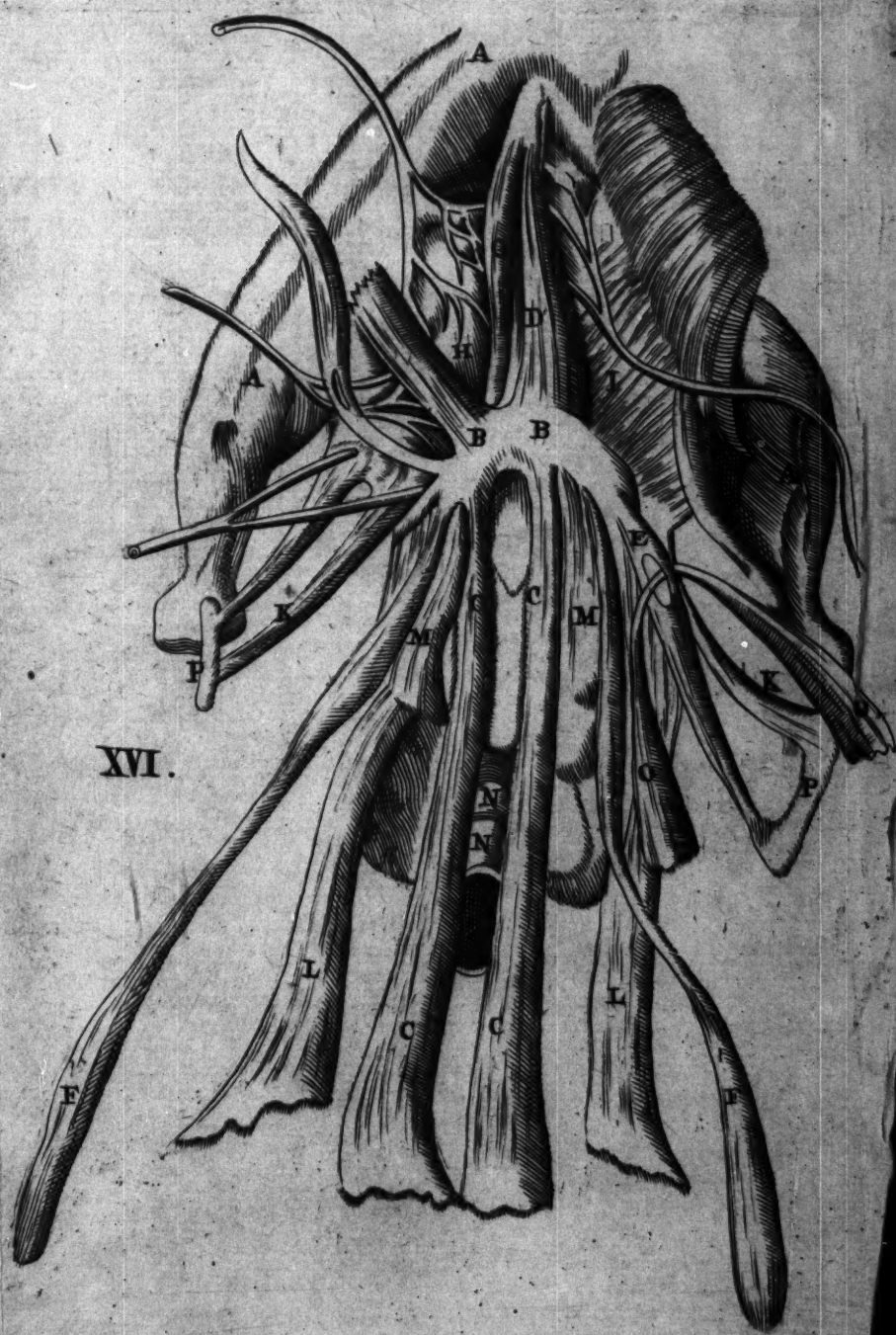
Y. The Part call'd *Anthelix*.

Z. The



Plate III.





III 359



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Z. The *Tragus* of the *Auricle*.

a. The *Antitragus*.

b. The Lobe of the Ear.

Fig. XVI. Shews the Muscles of the Tongue and *Os Hyoides*,

A. A. A. The Body of the Lower-Jaw.

B. B. The Body of the *Os Hyoides*.

C. C. The first Pair call'd *Sternohyoides*.

D. One of the second Pair of Muscles in its Place,
the other removed out of it.

E. E. The third Pair perforated in the Middle.

F. F. The fourth Pair call'd *Coracohyoides*.

G. A Muscle of the fourth Pair belonging to the
Tongue.

H. H. The *Parenchyma*, or Substance of the Tongue,
into which the Nerves are inserted.

I. A Muscle of the fifth Pair of the Tongue.

K. K. A Muscle of the first Pair thereof.

L. L. The common Muscles of the *Larynx*, call'd *Ster-*
nothyroides.

M. M. Another Pair of the same, call'd *Hyothyroides*.

N. N. The Cartilages or Rings of the Wind-pipe.

O. O. A Muscle of the Lower Jaw, call'd *Digastric*.

P. P. Portions of the *Styloide* Processes of the *Os Pe-*
trosum.

PLATE III

- 1. The front of the skull.
- 2. The base of the skull.
- 3. The side of the skull.
- 4. The top of the skull.
- 5. The front of the jaw.
- 6. The side of the jaw.
- 7. The top of the jaw.
- 8. The front of the teeth.
- 9. The side of the teeth.
- 10. The top of the teeth.
- 11. The front of the tongue.
- 12. The side of the tongue.
- 13. The top of the tongue.
- 14. The front of the throat.
- 15. The side of the throat.
- 16. The top of the throat.
- 17. The front of the neck.
- 18. The side of the neck.
- 19. The top of the neck.
- 20. The front of the chest.
- 21. The side of the chest.
- 22. The top of the chest.
- 23. The front of the abdomen.
- 24. The side of the abdomen.
- 25. The top of the abdomen.
- 26. The front of the pelvis.
- 27. The side of the pelvis.
- 28. The top of the pelvis.
- 29. The front of the legs.
- 30. The side of the legs.
- 31. The top of the legs.
- 32. The front of the feet.
- 33. The side of the feet.
- 34. The top of the feet.

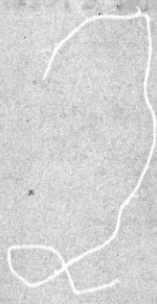


PLATE IV

Fig.

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- Fig. I. A. **T**HE *Uvula*, or *Gargareon*.
 B. B. The exterior Pair of Muscles.
 C. C. The Tendons thereof.
 D. D. The interior Pair of Muscles a little compress'd.
 E. Part of the Palate, whence the *Uvula* hangs.
- Fig. II. III. A. The Basis of the *Os Hyoides*.
 B. B. The Processes or Horns thereof.
 C. C. Two cartilaginous Appendices.
- Fig. IV. A. The first Muscle of the Tongue arising from the *Styloide* Process.
 B. The second Muscle of the Tongue.
 C. One of the third Pair, call'd *Genioglossum*.
 D. D. The fifth Pair, call'd *Ceratoglossum*.
 E. E. The *Gustatory* Nerves.
 F. F. The *Motory* Nerves of the Tongue.
 G. A Muscle of the *Os Hyoides*.
 H. Part of the *Styloform* Process.
 I. I. The *Os Hyoides*.
 K. The *Scutiform* Cartilage.
 L. L. Two Muscles proper to the *Larynx*.
- Fig. V. A. The Cartilage of the *Larynx*, call'd *Thyroides*, or *Scutiformis*.
 B. B. The Pair of Muscles call'd *Sternothyroides*.
 C. C. The other Pair call'd *Hyothyroides*.
- Fig. VI. A. The *Epiglottis*, yet lying hid under
 B. The *Scutiform* Cartilage, making the *Pomum Adami*.
 C. C. The Processes thereof.
 D. D. Two proper Muscles of the *Larynx*, whereof one is removed to shew
 E. The Annular Cartilage, or *Cricoides*.
 F. The protuberant Part thereof.
 G. Part of the *Arteria Aspera*, or Wind-pipe.
- Fig. VII. A. A. A. The *Os Hyoides*.
 B. The *Epiglottis*.
 C. C. The hinder Part of the *Cart. Scutiformis* hollow.
 Q² D. D. The

D. D. The hinder Part of the Muscles call'd *Cricoarytænoides*.

E. The hinder and membranous Part of the *Aspera Arteria*.

F. F. The Pair of Muscles call'd *Arytænoides*.

Fig. VIII. A. The concave Part of the *Scutiform Cartilage*.

B. The third and lateral Pair of Muscles call'd *Cricoarytænoides*.

C. The first Pair of proper Muscles of the *Larynx*.

D. The fourth and internal Pair, call'd *Thyroarytænoides*.

E. The Insertion of the *Recurrent Nerve*.

F. F. The posterior membranous Part of the *Aspera Arteria*.

Fig. IX. A. A. The *Cartilago Thyroides vel Scutiformis*.

B. B. Its inferior Processes.

C. Concave Part thereof.

Fig. X. A. The internal Part of the *Cartilago Cricoides*.

B. Its inferior and anterior Part.

C. Its posterior and superior Part.

Fig. XI. A. B. The hinder View of the *Cart. Arytænoides* join'd to the *Cricoides*.

C. The broad hinder Part thereof.

Fig. XII. } Shew the Cartilages separated from the *Cricoides*,
& XIII. } which constitute the *Arytænoides*.

Fig. XIV. Shews the Muscles of the Eye, &c. in their natural Situation.

A. A. A. A. The Section of the Scull.

B. The interior medullary Portion of the Brain dissected.

C. C. The *Cerebellum*.

D. The Meeting and Union of

E, E. The *Optic Nerves* proceeding to each Eye.

F, The *Glandula Lachrymalis* drawn aside from its Place.

G. G. The first Muscle of the Eye, call'd the *Attollent*.

H. The

- H. The second Muscle, call'd *Depriment*.
- I. I. The third Pair, call'd the *Adducent Muscles*.
- K. K. The fourth Pair, call'd the *Abducent Muscles*.
- L. The fifth, or external oblique Muscle.
- M. The sixth, or internal oblique Muscle, passing thro'
- N. The *Trochlea*, or Pulley of the Nose-Bone.
- O. The *Optic Nerve* in the Right Eye.
- P. The *Tunica Cornea*, in the Middle whereof is the Pupil of the Eye.

Fig. XV. A. The *Optic Nerve*.

B. The *Nervus Motorius* of the Eye.

C. The *Trochlear Muscle* passing thro'

D. The Bony Pulley, by

E. Its tendinous Part.

F. G. The *Musculi Recti* both external and internal.

H. The Muscle of the Upper Eye-lid contain'd within the Orbit.

I. I. I. The Eye-lids cut off.

K. K. The *Gilia*, or hairy Borders of the Eye-lids.

Fig. XVI. Shews the Muscles of the Eye separate and extended.

A. The *Tunica Cornea* with its *Pupilla*.

B. The right *attollent* Muscle.

C. The right *depriment* Muscle.

D. The right internal, or *adducent* Muscle.

E. The right external, or *abducent* Muscle.

F. The oblique internal, or *Trochlearis*.

G. The oblique external or inferior Muscle.

Fig. XVII. A. The *Optic Nerve* laid bare.

B. B. The *Dura Mater* which encloses it.

C. C. The *Sclerotica* laid open, in order that

D. The *Uvea* may be seen.

Fig. XVIII. A. The *Optic Nerve* with only the *Pia Mater*.

B. B. The *Tunica Choroides* clear from the *Sclerotica*.

C. C. C. C. Veins disperfed over the *Sclerotica*.

D. D. The *Sclerotica* pull'd down or inverted.

E. E. A Fissure or Rent in the *Sclerotica*.

Fig. XIX.

- Fig. XIX. A. The Optic Nerve.
 B. B. The *Uvea* turn'd back, and there separated from the *Retina*.
 C. C. Part of the *Retina* seen under the *Uvea*.
 Fig. XX. A. The *Retina* quite bare.
 B. B. The *Tunica Conjunctiva*, or White of the Eye.
 C. The *Cornea*.
 D. The Pupil of the Eye.
 Fig. XXI. Exhibits the *Glassy Tunicle* with the *Ligam. Ciliare*.
 Fig. XXII. Shews the *Aqueous Humour*, in the Middle whereof is an Hollow receiving the anterior Face of the *Crystalline*.
 Fig. XXIII Represents the *Vitreous Humour*, in the Middle of which is placed the *Crystalline*.
 Fig. XXIV A. The Form of the *Crystalline Humour*.
 B. The Tunicle which encloses it.
 Fig. XXV. Exhibits a longitudinal Section of the Eye thro' the Pupil and Optic Nerve.
 A. B. D. E. The Circumference of the Section or Body of the Eye.
 A. B. The *Tunica Cornea*.
 I. L. The Pupil of the Eye.
 Q. Q. The *Aqueous Humour*.
 N, O. P. The *Crystalline Humour*.
 R. R. R. The *Vitreous Humour*.
 M. N. The Black Filaments, call'd *Ligam. Ciliare*.
 D. E. G. H. Part of the *Optic Nerve* with its Coats.
 T. The fine Capillaments thereof arising from the Brain, and
 S. S. S. Their curious Extension over the Bottom of the Eye on the *Retina*, on each Side, to the *Ligam. Ciliare*.
 Fig. XXVI Is a Scheme, shewing the Manner how *Vision* perform'd by the *Apparatus* of the Eye.

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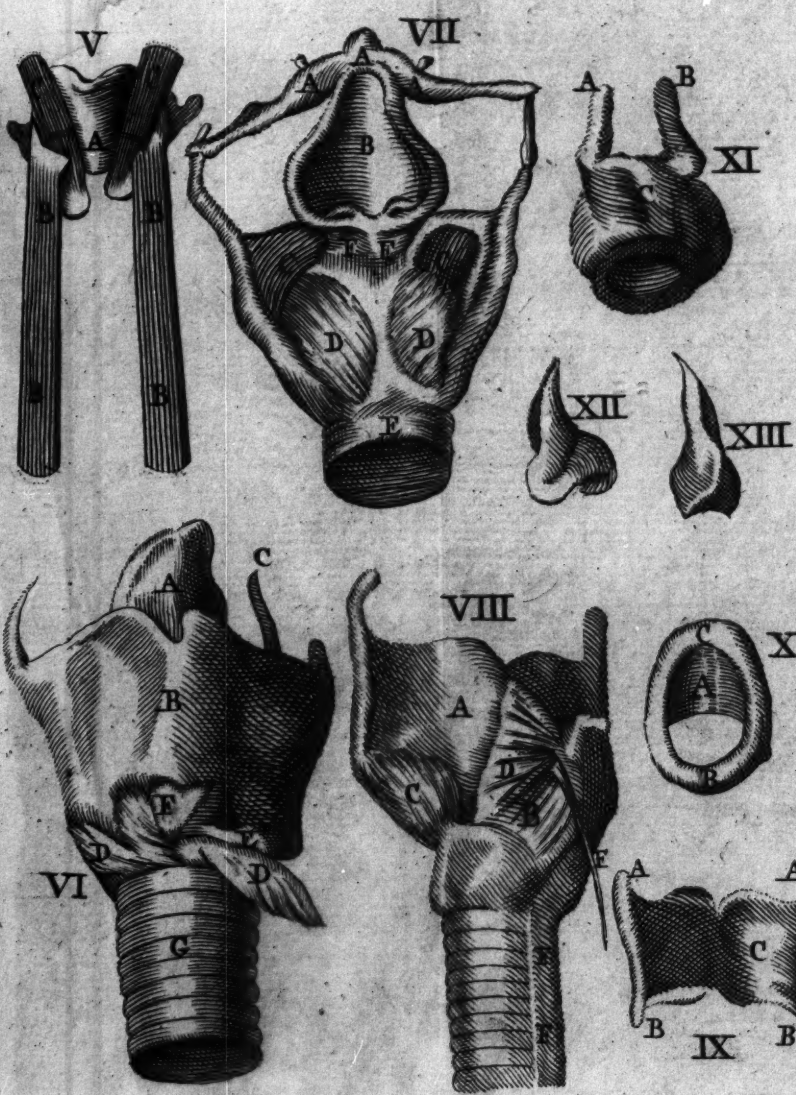
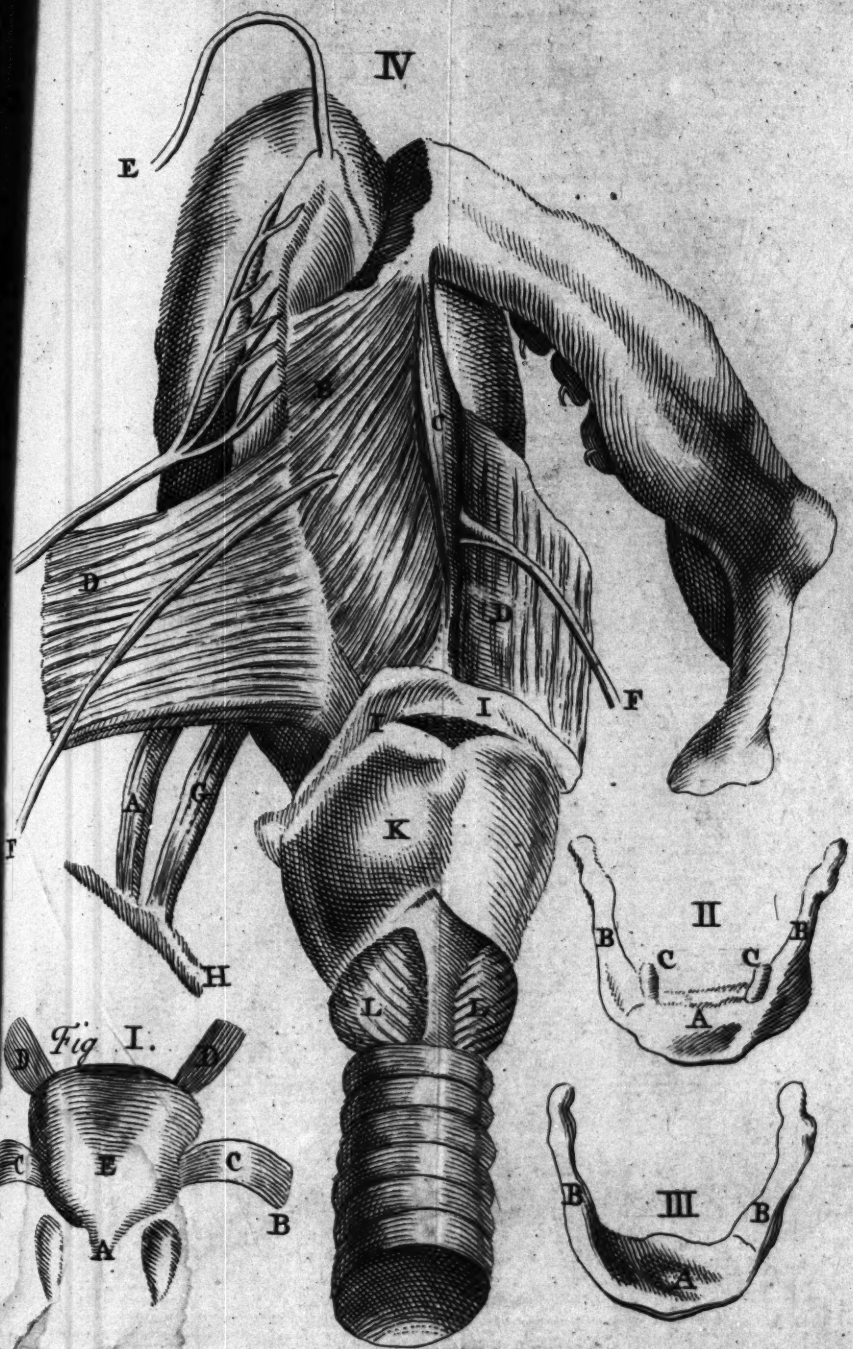
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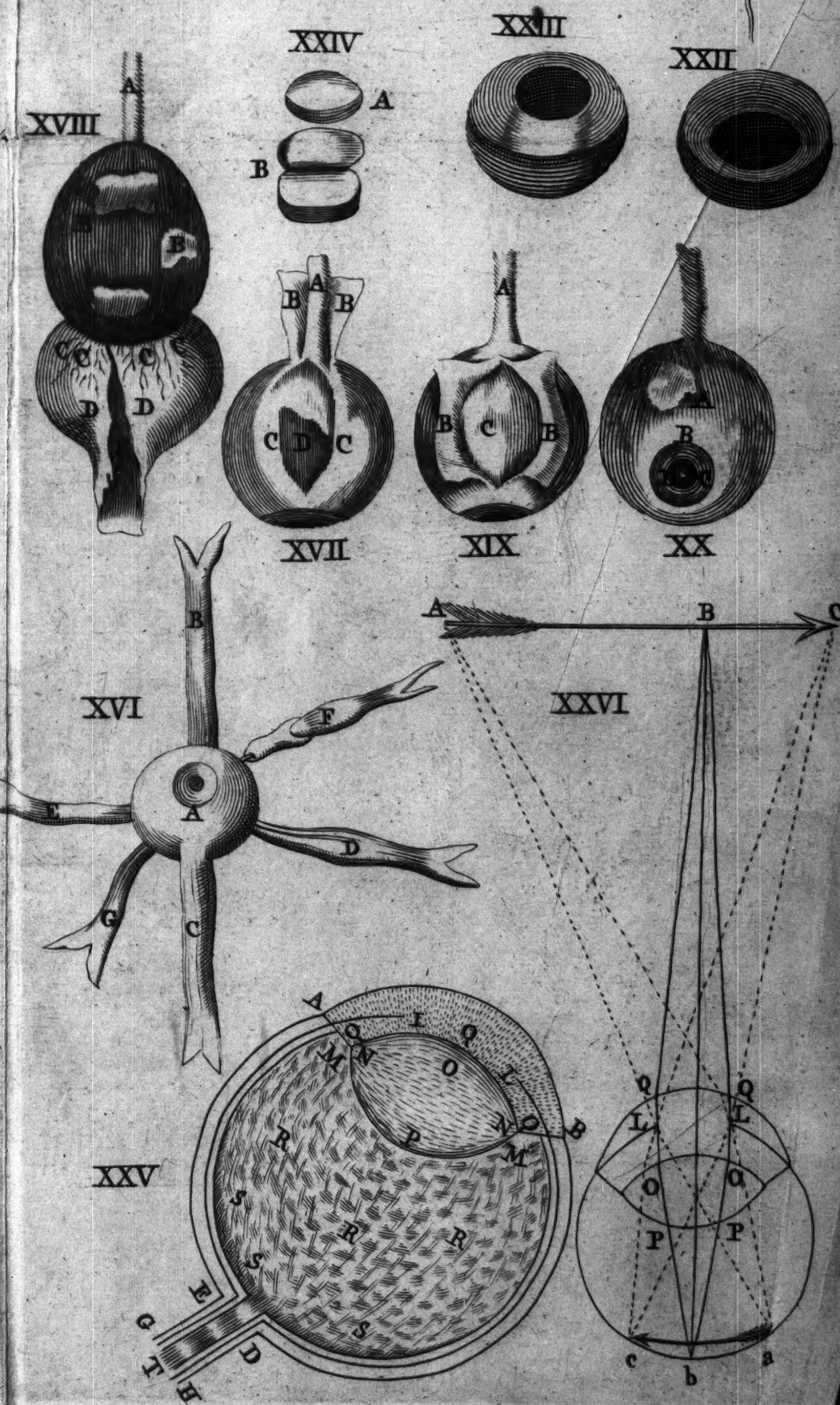
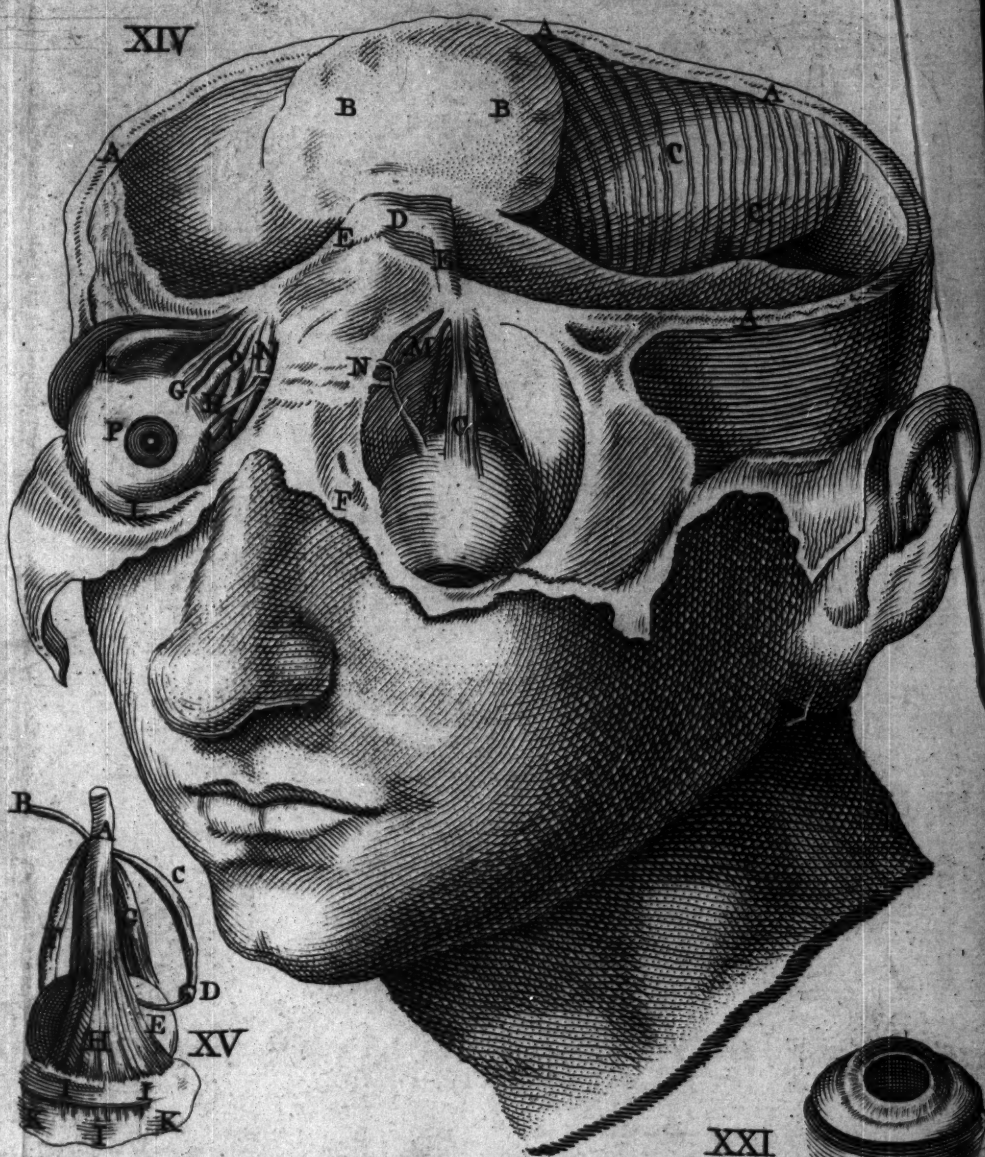
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Plat. IV

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A. B. C. Is an Object presented to the Eye. From the Point B let there proceed the Ray B Q, falling on the Aqueous Humour at Q, which (by the Laws of *Dioptrics*) is refracted from its first Direction towards the Center of the circular Arch Q Q; from Q then it passes through the Pupil at L to the *Crystalline* Humour at O, and passing through the same to P, it receives a still farther Refraction, and (the *Crystalline* Humour being contrived with a special *Convexity*) it is such as determines all the Rays, admitted by the Pupil L L, to converge or meet together in one Point (call'd the *Focus*) at the Distance of the Bottom of the Eye. And therefore all the Rays coming from B will be united in the Bottom of the Eye at *b*; and in like manner it is shewn that all the Rays proceeding from the Extremities of the Object A C, will be converged in the Bottom of the Eye at *a* and *c*: But the Focal Point is that where the Images of Objects are form'd by the *Lens's*; and consequently *abc* will be the Image of the Object A B C, but inverted, because the visual Rays intersect or cross each other in passing through the *Lens* or *Crystalline* O O P P. Now this Image *abc* is painted on the *Retina*, overspread with the Filaments of the *Optic Nerve*, which receive the Species or Impression thereof, and convey it to the Mind in the *Common Sensory* of the Brain, as hath been said before.

A.B.C. is an Object presented to the Eye. From the
 Point B in there proceed the Ray B.O. falling
 on the Assumed Human eye O. which by the
 Laws of Dioptrics is refracted from its first
 Direction towards the Center of the circular
 Arch O.O. from O then it passes through
 the Point A.L. to the Crystalline Humour A.O.
 and passing through the Point P. it receives
 a still further Refraction. and (the Crystalline
 Humour being conceived with a second Cen-
 ter) it is such as determines all the Rays
 adjoined by the Point L.L. to converge or
 meet together in one Point (call'd the Focus)
 at the Distance of the Bottom of the Eye.
 And therefore all the Rays coming from B
 will be united in the Bottom of the Eye at F
 and in like manner it is shown that all the
 Rays proceeding from the Extremities of the
 Object A.C. will be converged in the Bottom
 of the Eye at a and c. that the focal Point is
 that where the Images of Objects are form'd
 by the Lens; and consequently aac will be
 the Image of the Object A.B.C. produced.
 Hence the visual Rays incident on this Eye
 enter in passing through the Lens or Crystalline
 O.O.P. Now this Image aac is painted on
 the Retina, overprinted with the Elements of
 the Optic Nerve, which receive the Species or
 Impression facted, and convey it to the Mind
 in the Cerebral Organ of the Brain as shall
 be said hereafter.

PLATE V.

Fig: I.

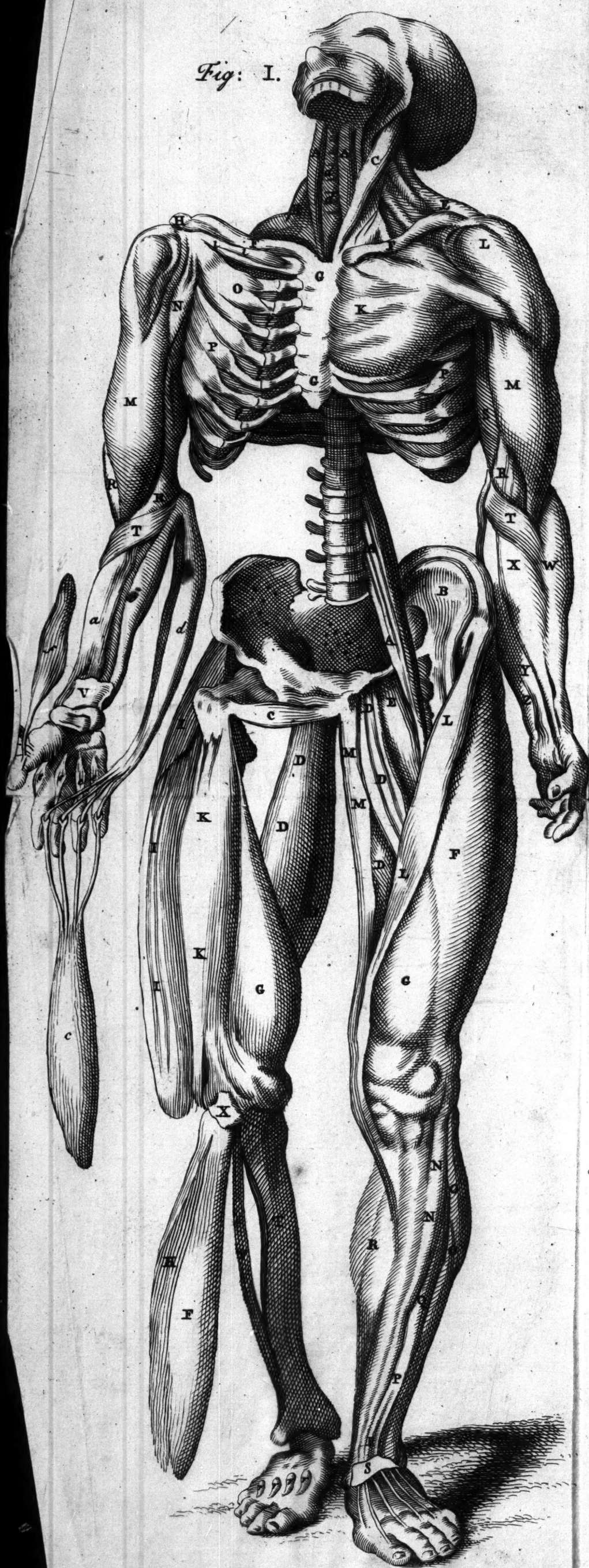


Fig: II.



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Fig. 1. **E**Xhibits a View of the Muscles on the anterior and inner Part of the Body.

- A. A. The *Musculi Longi*, or long Muscles of the Neck.
- B. The Muscle call'd *Scalenus*.
- C. The *Mastoide* Muscle.
- d. d. The *Vertebræ* of the Neck.
- E. The *Levator Scapulæ*.
- F. F. The *Claviculæ*, or Collar-Bones.
- G. G. The *Os Sternum*, or Breast-Bone.
- H. The *Acromion* of the Shoulder-Bone.
- i. i. The *Subclavian* Muscle.
- K. The *Pectoral* Muscle.
- L. The *Deltoide* Muscle.
- M. The *Biceps*.
- N. The Muscle call'd *Perforatus*, or *Coracobrachiceus*.
- O. The *Serratus Minor*.
- P. The *Serratus Major*.
- q. q. q. q. The *Intercostal* Muscles.
- R. R. R. The Muscle call'd *Brachiceus*, seen in each Arm on both Sides the *Biceps*.
- S. S. The first or longest of the *Extensores Brachii*.
- T. T. The *Pronator rotundus* of the *Radius*.
- V. The *Pronator quadratus* of the *Radius*.
- W. The *Supinator longus* of the *Radius*.
- X. The first or external *Flexor* of the *Wrist*.
- Y. The Muscle call'd *Palmaris*.
- Z. The internal *Flexor* of the *Wrist*.
- a. The Bone of the *Radius*.
- b. The Bone of the Cubit connected thereto by a membranous Ligament.
- c. The *Musculus perforatus*, or perforated Muscle.
- d. The *Musculus perforans*, or which perforates the other.
- e. e. e. e. The *Lumbrical* Muscles of the *Metacarpal* Bones.
- f. The *Flexor* of the Thumb.
- g. The *Adducent* Muscles of the Thumb.

The following Alphabet describes the lower
Part of Fig. I.

- A. A. The *Psoas* Muscle.
- B. The *Iliac* Muscle.
- C. The internal Obturator of the Thigh.
- D. D. The *Triceps*.
- E. The Muscle call'd *Pectineus*, or *Lividus*.
- F. F. The *Musculus Rectus* in the Left Leg in its Place;
in the Right it hangs down.
- G. G. The *Vastus internus*.
- H. The *Vastus externus*, hanging down from the
Right Thigh.
- I. I. The *Musculus Membranosus*, or *Fascia lata*.
- K. K. The *Crureus*, or Crureal Muscle.
- L. L. The *Longus, Fascialis*, or *Sartorius*.
- M. M. The *Musculus Gracilis*.
- N. N. The *Tibieus*.
- O. O. The *Peronæus*.
- P. P. The Muscle extending the four Lesser Toes.
- Q. The Muscle extending the Great Toe.
- R. The *Gastrocnemicus*.
- r. r. r. r. The *Musculi interossei*.
- S. The transverse Ligament of the Foot.
- T. The *Tibia*.
- V. The *Fibula*.
- X. The *Patella*, or Knee-pan.

Fig. II. Shews the principal Muscles which offer them-
selves to view on the posterior Part of the
Body.

- A. A. The *Musculi Complexi*.
- B. B. The *Splenii*.
- C. C. The *Levatores* of the *Scapulæ*.
- D. The *Trapezius* rais'd out of its Place.
- E. The *Supra-spinatus*.
- F. The *Infra-spinatus*.
- G. The *Rotundus major*.

H. Th

- H. The *Rotundus minor*.
- I. I. The *Rhomboides*.
- K. K. The *Latissimus Dorsi*.
- L. The *Serratus posticus superior*.
- M. The *Serratus posticus inferior*.
- N. N. The *Longissimus Dorsi*.
- O. O. The *Sacrolumbus*.
- P. The *Quadratus*.
- Q. The *Sacer Dorsi*.
- R. The *Musc. longus* extending the Arm.
- S. The other *Extensor*, call'd *Brevis*.
- T. T. One of the *Supinatores Brachii*.
- V. The first of the *Extensores Carpi* hanging down.
- W. The other *Extensor Carpi*.
- X. X. x. The two Extenders of the Fingers.
- Y. The *Brachiceus externus*.
- Z. The external *Apophysis* of the Shoulder-Bone.

The following Alphabet refers to the Muscles
of the Lower Joints.

- A. The *Glutæus major* out of its Place.
- B. The *Glutæus medius*.
- C. The *Musculus Pyramiformis*, or *Iliacus externus*.
- D. The *Obturator internus*, alias *Marsupialis*.
- E. E. The *Biceps* which bends the Leg.
- F. F. The *Semimembranosus*.
- g. g. The *Seminervosus*.
- h. h. The *Gracilis*.
- I. I. I. The *Triceps* in the Left Thigh.
- K. The *Vastus externus*.
- Δ. Δ. Δ. The *Triceps* laid bare in the Right Thigh.
- L. L. The *Popliteus*.
- M. M. The two *Gastrocnemii* removed from their Place.
- N. N. The Muscle call'd *Soleus*.
- O. The *Musculus Plantaris*.

- H. The Romanesque
 - I. The Romanesque
 - K. The Romanesque
 - L. The Romanesque
 - M. The Romanesque
 - N. The Romanesque
 - O. The Romanesque
 - P. The Romanesque
 - Q. The Romanesque
 - R. The Romanesque
 - S. The Romanesque
 - T. The Romanesque
 - V. The Romanesque
 - W. The Romanesque
 - X. The Romanesque
 - Y. The Romanesque
 - Z. The Romanesque
- The following Alphabet is to be used
- A. The Romanesque
 - B. The Romanesque
 - C. The Romanesque
 - D. The Romanesque
 - E. The Romanesque
 - F. The Romanesque
 - G. The Romanesque
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Fig: I.



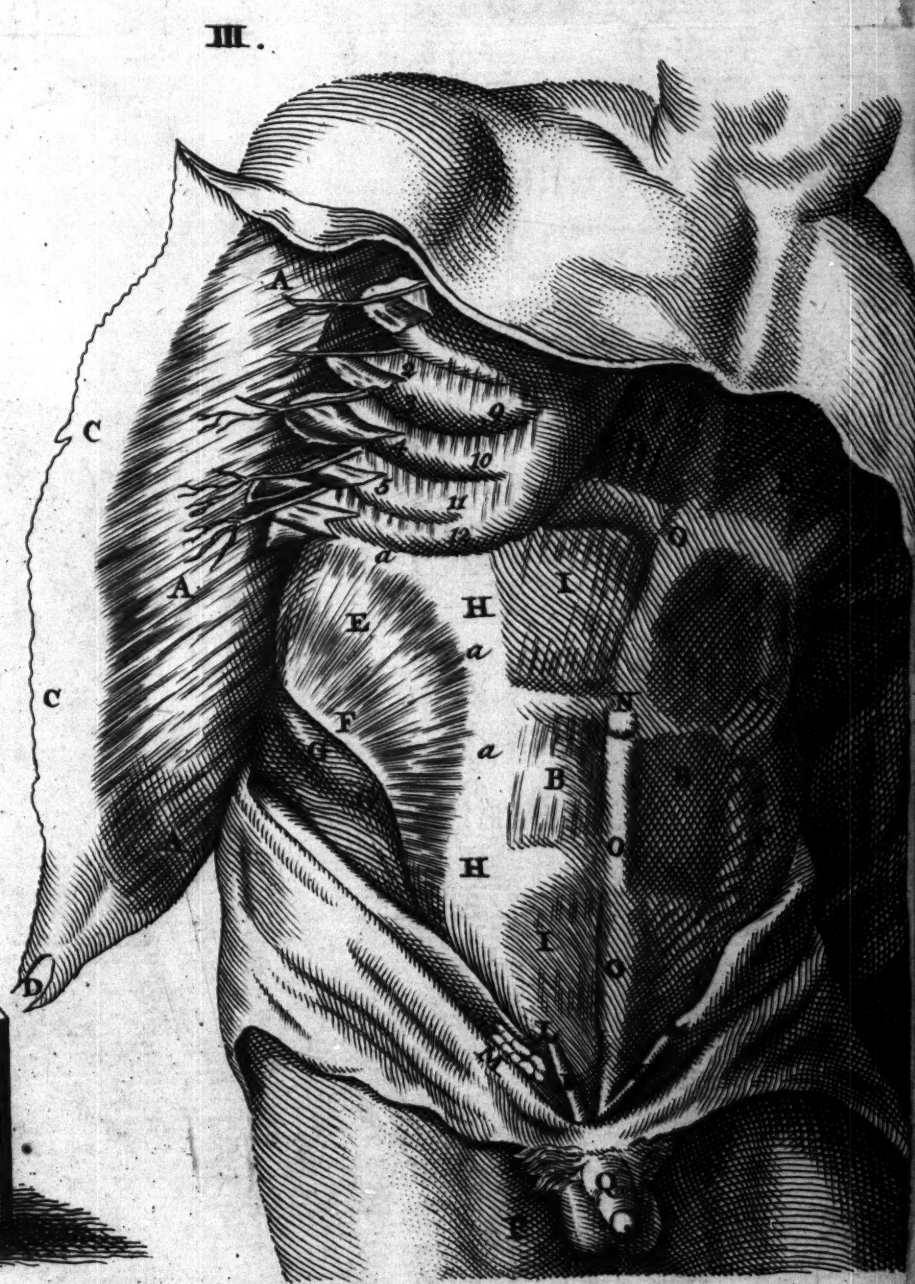
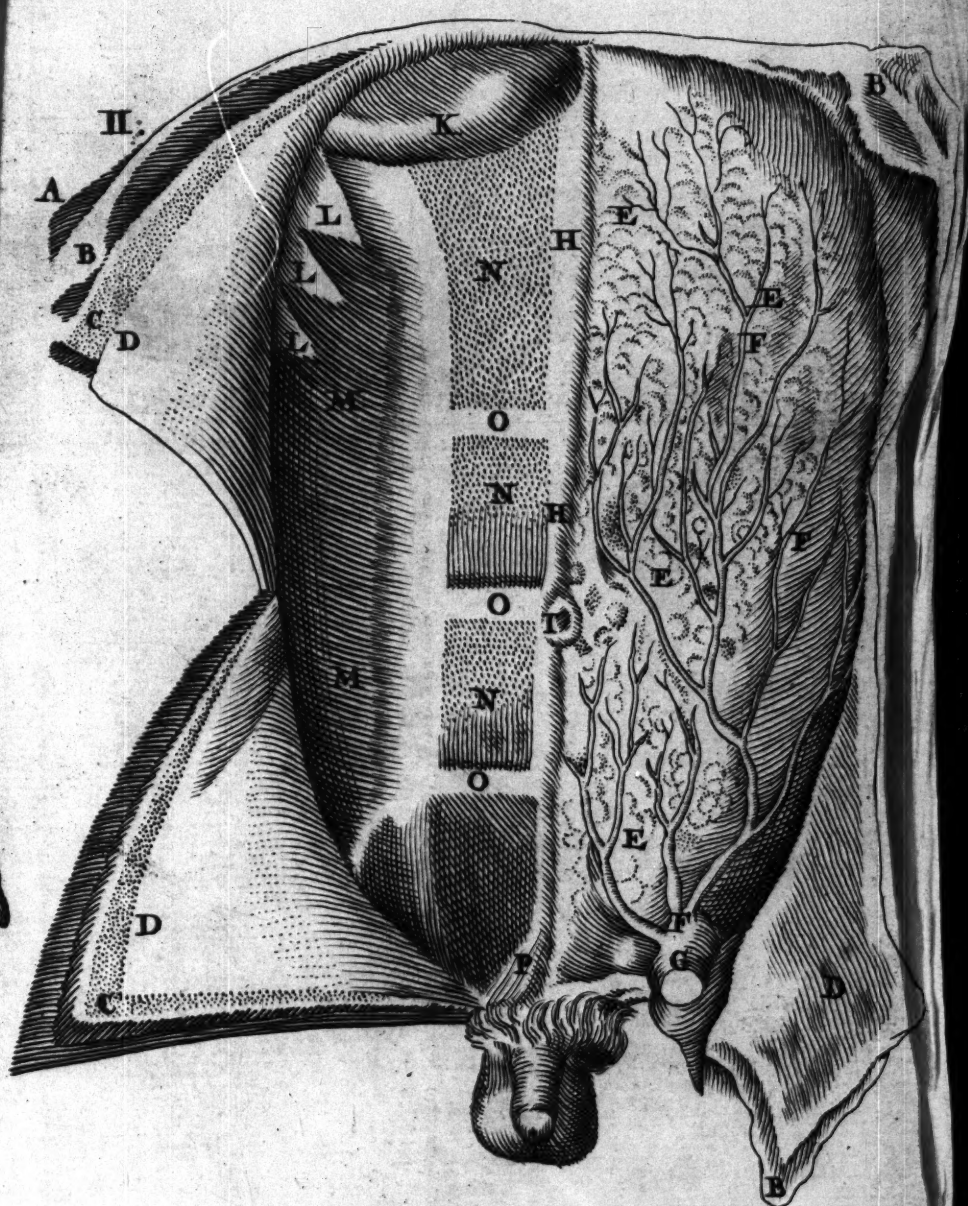


Fig. I. **S**hews the inmost Muscles on the hinder Part of the Body.

- a. a. The *Recti minores* of the Head.
- b. b. The *Recti majores*.
- c. c. The *Obliqui superiores*.
- d. d. The *Obliqui inferiores*.
- e. The *Levator Scapulae*.
- f. f. The two *Spinati*.
- E. E. The two transverse Muscles of the Neck.
- G. G. The *Sacrolumbus*.
- H. H. The *Longissimus Dorsi*.
- I. I. The same removed out of its Place.
- K. The *Semispinatus* of the Back.
- L. L. The *Sacer Dorsi*.
- M. M. The *Quadrati* of the Back.
- N. The first *Supinator* of the Arm.
- O. The *Bicornis* out of its Place.
- P. The other *Extensor* of the Wrist.
- Q. Q. Two *Extenders* of the Fingers out of Place.
- R. The *Extender* of the Fore-finger.
- S. S. The two *Extenders* of the Thumb.

The following Characters design the Muscles of the lower Parts.

- A. The *Glutæus medius* out of its Place.
- B. The *Glutæus minimus* in its Place.
- C. C. The same out of its Place.
- D. D. The *Pyriform* Muscle on each Side.
- E. The *Obturator internus*, or *Marsupialis*.
- F. The same on the Left-side out of its Place.
- G. The *Marsupium*, or Purse-like Part.
- H. H. The *Obturator externus*.
- K. The fourth of the *Quadrigemini*.
- L. L. The *Biceps*, which bends the Leg.
- M. M. The *Semimembranosus*.
- N. N. The

- N. N. The *Seminervosus*
- O. O. The *Gracilis*.
- Δ. The *Triceps*.
- φ. The *Crureus*.
- P. P. The *Tibiæus posticus*.
- Q. Q. The *Perforans* of the Foot.
- R. The *Perforatus*.
- S. S. S. The Bender of the Great Toe.
 - t. The *Adductor Pollicis*.
 - u. The *Abductor* of the same.
 - x. The *Abductor minimi Digiti*.
 - z. The fleshy Part of the Bottom of the Foot.

Fig. II. Exhibits a View of the common Integuments of the Abdomen separated by Dissection, with the Fat, &c. on one Side, and some Muscles express'd on the other.

- A. A. The *Cuticle*, or Scarf-Skin.
- B. B. B. B. The *Cutis*, or true Skin.
- C. C. The Fat separated from
- D. D. The *Membrana carnosa*, or *Adiposa*.
- E. E. E. The Fat in its natural Site remaining on one half of the Abdomen.
- F. F. F. Vessels dispersed thro' the same.
- G. Copious Glands in the *Inguen*.
- H. H. The *Linea Alba*.
- I. The *Umbilicus*, or Navel.
- K. Part of the Pectoral Muscle.
- L. L. L. The Teeth of the *Serratus anticus major*.
- M. M. The *Obliquè Descendens*.
- N. N. N. The *Rectus*, with
- O. O. O. The nervous Inscriptions thereof.
- P. The Right pyramidal Muscle *in situ*.

Fig. III. Exhibits to View several Muscles and other Parts of the Abdomen.

- A. A. The *Obliquè Descendens* rais'd, shewing its Beginning and Insertion of Nerves.

B. B. The

PLATE VI.

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- B. B. The *Musculi Recti* on each Side.
- C. C. Marks the Tract where the *Obliquè Descendens* becomes membranous.
- D. The Hole therein, thro' which the Spermatic Vessels pass to the *Testes*.
- E. The *Obliquè Ascendens*.
- F. Its carnos Origin from the Spine of the *Os Ilii*.
- G. The said Spine or *Appendix* of the *Os Ilii*.
- H. H. The Line where the Tendons of the Oblique Muscles begin.
- I. I. The Right Muscle seen thro' the said Tendons.
- K. K. The Productions of the *Peritonæum* inclosing the *Spermaties* at their Exit for the *Testes*.
- L. L. Perforations in the lower Part of the *Ascendens* and *Rectus* for the Egress of the Spermatic Vessels.
- M. The *Glandules* of the *Inguen* laid bare.
- N. The Navel.
- O. O. O. The *Linea Alba*.
- P. The Thigh near the *Pudenda*.
- Q. The *Penis*.
- 1. 2. 3. } The Nerves issuing out from under the Ribs,
4. 5. } and spreading over the *Obliquè Descendens*.
- 9. 10. 11. 12. The four inferior Ribs.
- a. a. a. The Fibres of the *Obliquè Ascendens*.

PLATE VII.

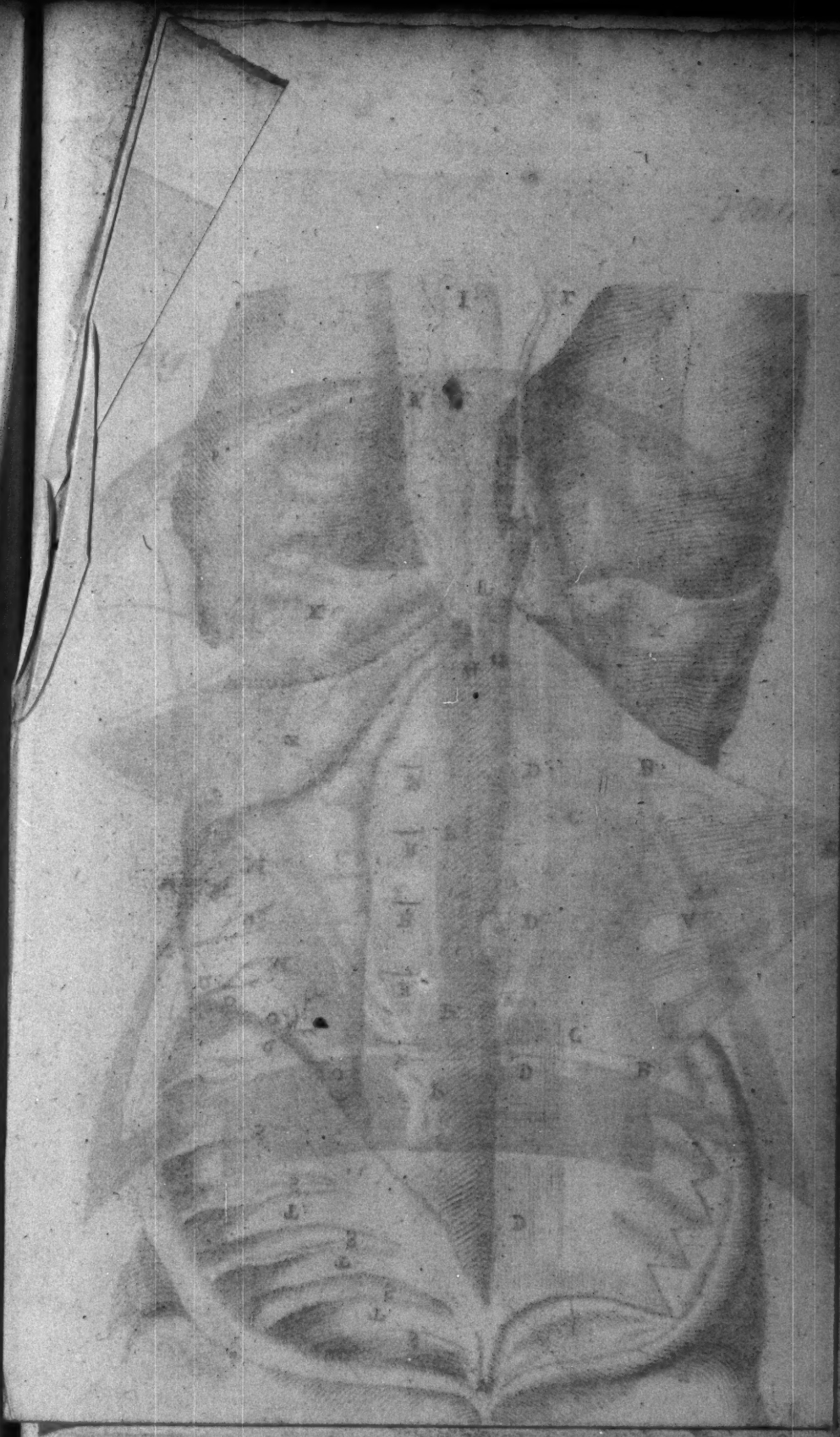
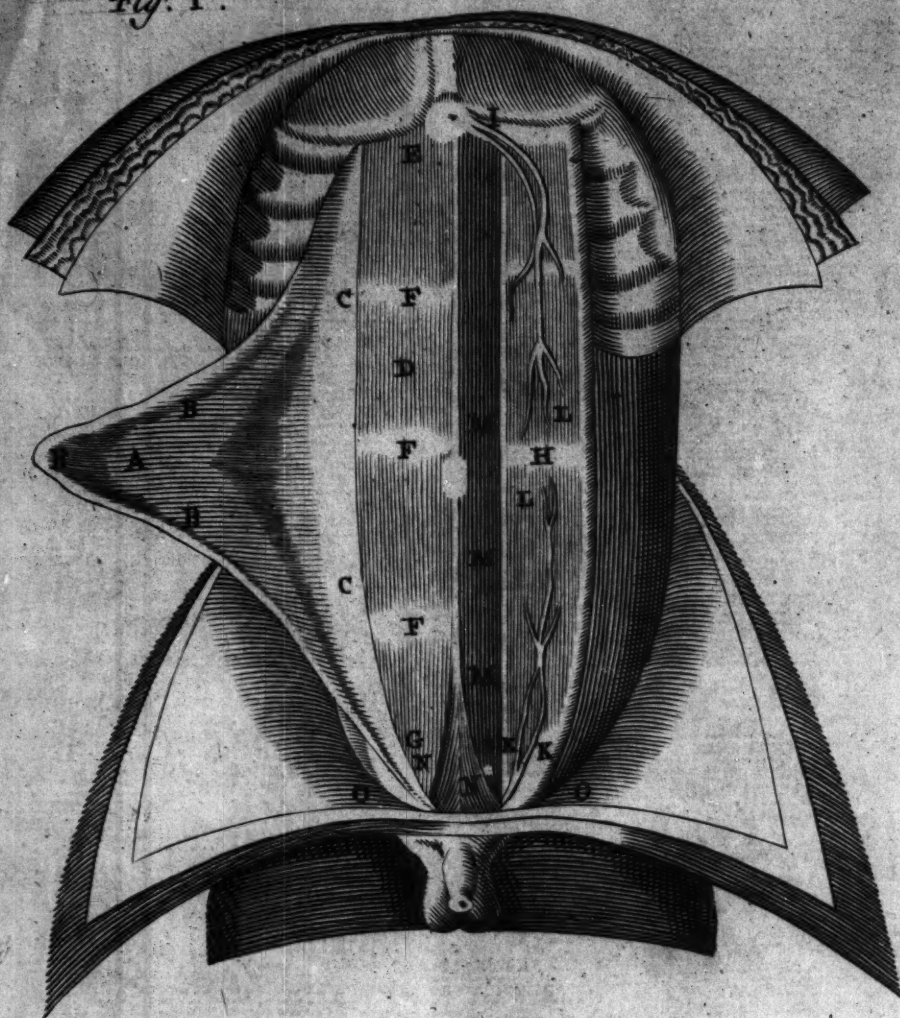
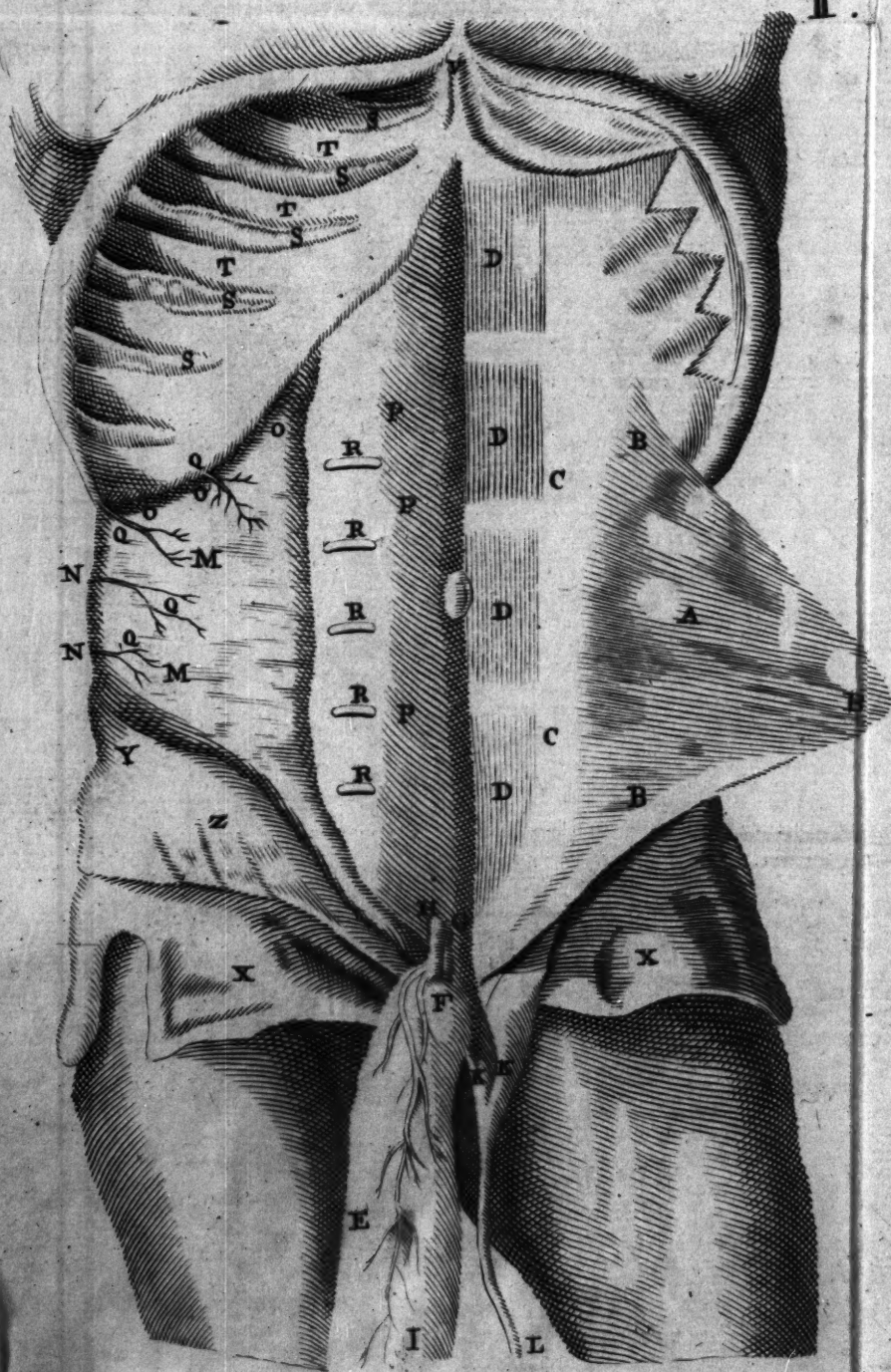


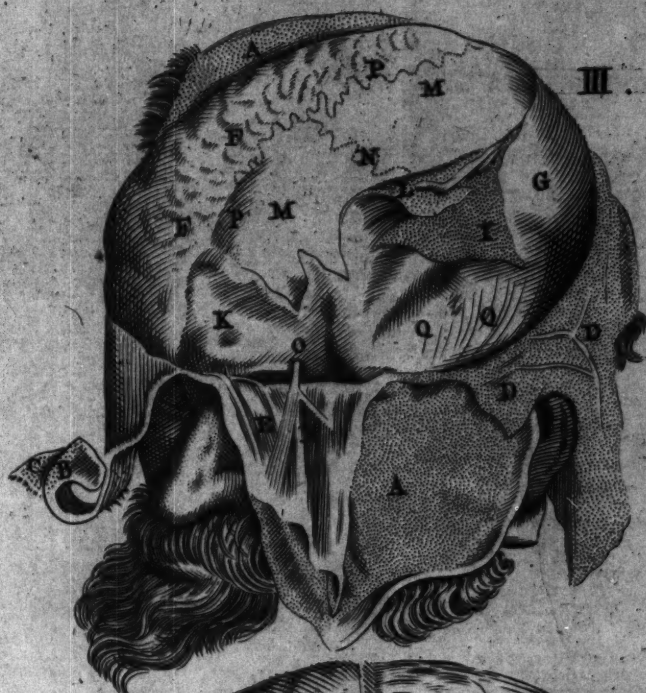
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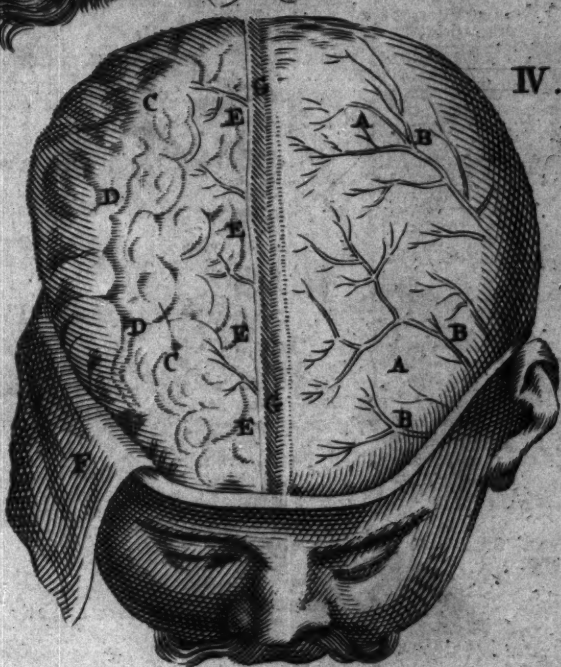
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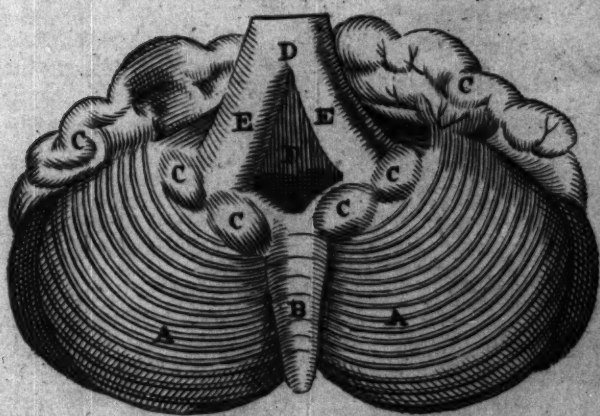


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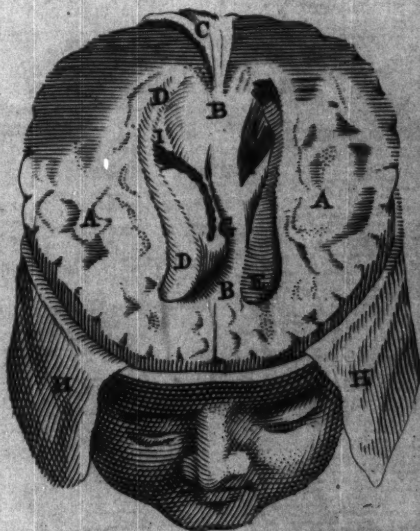


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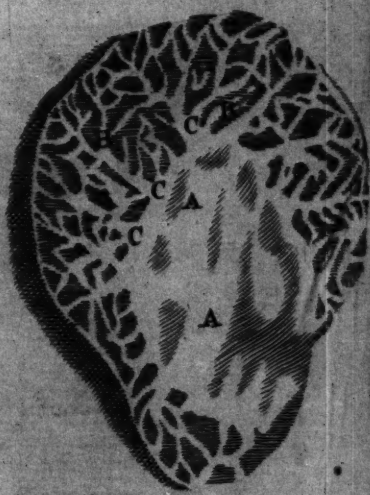
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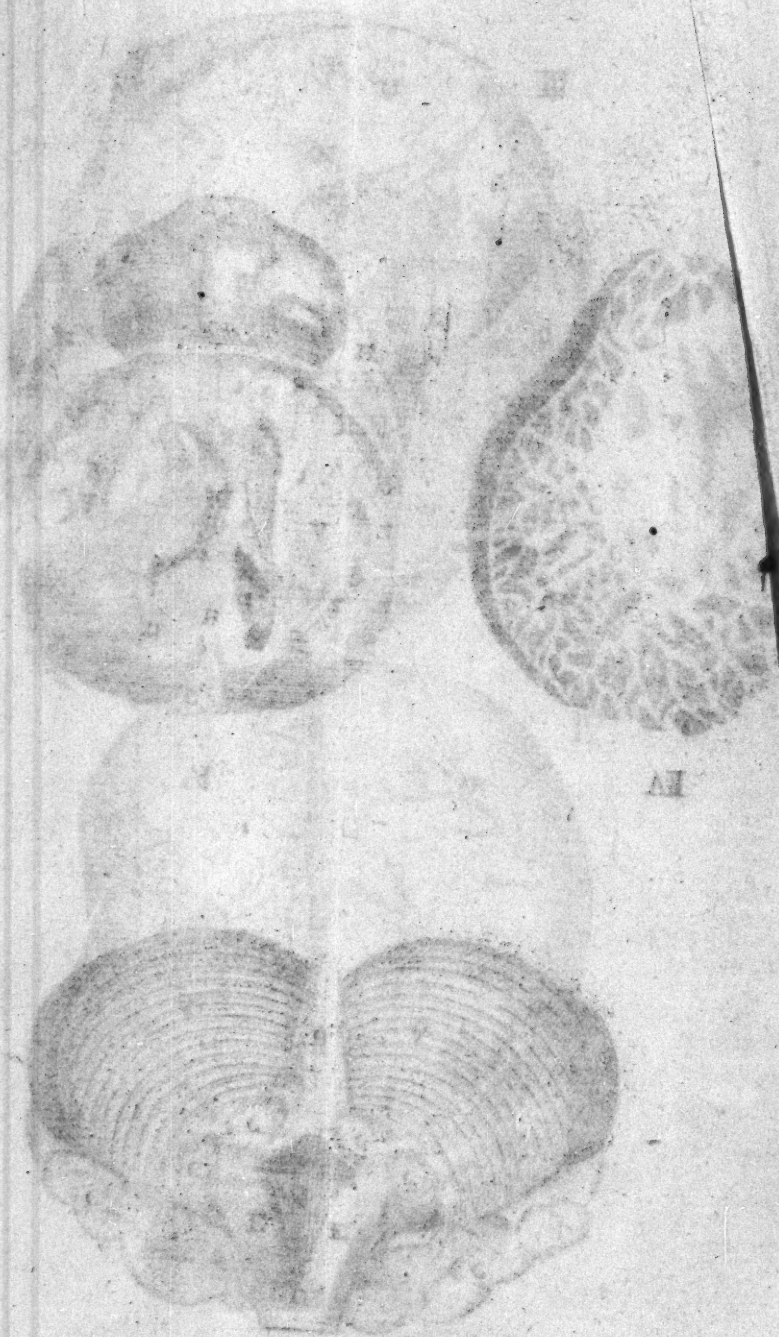


VI.



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Fig. I. **S**hews some other Muscles and Vessels of the *Abdomen*.

- A. The *Transverse Muscle* raised about its Beginning.
- B. B. B. Its Beginning.
- C. C. Part of its Tendon.
- D. The *Musculus Rectus*.
- E. Its Beginning.
- F. F. F. The tendinous Inscriptions thereof.
- G. Its End.
- H. The posterior Face of the other *Musculus Rectus*.
- I. The *Mammary Vein* and *Artery* descending thereon.
- K. K. The *Epigastric Vein* and *Artery*.
- L. L. The *Anastomosis* of the Veins.
- M. M. The *Peritonæum* laid bare of Muscles.
- N. N. The *Pyramidal Muscles*.
- O. O. The *Processes* of the *Peritonæum* descending to the *Scrotum*.

Fig. II. A. The oblique ascending Muscle raised.

- B. B. Its Beginning.
- C. C. A Portion of its Tendon which covers the *Rectus*.
- D. D. D. The *Musculus Rectus in situ*.
- E. The interior Face of the *Rectus* raised from its Place.
- F. Its lower Extremity adhering to the *Os Pubis*.
- G. H. The *Epigastric Vein* and *Artery* thereon.
- I. Their Concourse with the *Mammary Vessels*.
- K. K. The *Pyramidal Muscles* raised from their Place.
- L. Their Tendon reaching to the Navel.
- M. M. The *Transverse Muscle in situ*.
- N. N. Its first and nervous Origin.
- O. O. O. Its second carnous one.
- P. P. P. Its Tendon inserted in the *Peritonæum*.
- Q. Q. Q. Nerves proceeding from the *Spinal Marrow*.
- R. R. R. Branches of *Veins* and *Arteries* from the *Rectus*, cut off at their Passage thro' the *Transverse Muscle*.

S. S. S. The

- S. S. S. The Ribs.
 T. T. T. The Intercoſtal Muſcles.
 V. The Extremitie of the *Os Sternum*.
 X. X. The Skin ſeparated and hanging down.
 Y. The Spine of the *Os Ilium*.
 Z. Some Muſcles growing to that Bone.
- Fig. III. Exhibits a View of the Integuments of the Skull.
 A. A. The *Cutis* and *Cuticula*, ſhewing the Roots of the Hair.
 B. The *Cutis*, or true Skin.
 C. The *Cuticle* ſeparated therefrom.
 E. E. The Frontal Muſcle out of its Place.
 F. F. The Fat ſpread over the Skull.
 G. The *Pericranium* lying on the *Perioſteum*.
 I. The ſame raiſed up, and turned back.
 K. The *Perioſteum* expanded over the Skull.
 L. The ſame raiſed up from it.
 M. M. The Skull laid bare.
 N. The *Coronal* Suture.
 O. The Hole for the Exit of Nerves to the Frontal Muſcles.
 P. P. The *Sagittal* Suture.
 Q. Q. The Temporal Muſcle as yet cover'd with the *Pericranium*.
- Fig. IV. Shews the Coats of the Brain upon taking off the Skull.
 A. A. The *Dura Mater* covering the Left Lobe of the Brain.
 B. B. B. Veins and Arteries diſperſed thro' the ſame.
 C. C. C. The *Pia Mater* cloſely embracing the Brain.
 D. D. The *ſinuouſ* or *anfraſtuouſ* Unevenneſſes of the Brain.
 E. E. E. Veſſels ſpread over the *Pia Mater*.
 F. The *Dura Mater* turn'd off the Brain.
 G. G. The *Falx*, or *Sinus* form'd by the Duplicature of the *Dura Mater*, dividing the Brain into the Right and Left Lobe.

Fig. V. Is a View of the *Cerebellum* on raising the Skull,

A. A. The two Lobes of the *Cerebellum*.

B. The Vermiform Process thereof.

C. C. The Processes which make the *Pons Varolii*.

D. The Beginning of the Spinal Marrow.

E. E. The two *Crura*, or Roots of the Spinal Marrow,

F. The fourth Ventricle of the Brain, call'd *Calamus Scriptorius*.

G. G. A Portion of the Brain adhering to the *Cerebellum*.

Fig. VI. A transverse Section of the Brain through the Ventricles.

A. A. The internal Substance of the Brain.

B. B. The *Corpus Callosum* drawn a little to the Left.

C. Part of the *Falx* turn'd backwards.

D. D. The anterior Right Ventricle disclosed on the Upper-part.

E. E. The Left Ventricle in like manner laid open,

F. F. The *Plexus Choroides*.

G. Part of the *Septum Pellucidum*.

H. H. The *Dura Mater* hanging down on each Side.

I. I. The two *Crura Med. Oblong.* or Portions of the *Fornix*.

Fig. VII. The same Section and View of the *Cerebellum*.

A. A. The white internal Substance thereof.

B. B. The exterior cortical Substance.

C. C. The elegant Branchery appearing in the Structure of the *Cerebellum*.

PLATE VII

- Fig. V. A View of the Cerebrum as it lies in the Brain.
A. The two Lobes of the Cerebrum.
B. The Vermiform Gland.
C. The Pons.
D. The Medulla Oblongata.
E. The Corpus Callosum.
F. The Fornix.
G. A Portion of the Brain showing the Cerebrum.
H. A Portion of the Brain showing the Cerebrum.
I. A Portion of the Brain showing the Cerebrum.
J. A Portion of the Brain showing the Cerebrum.
K. A Portion of the Brain showing the Cerebrum.
L. A Portion of the Brain showing the Cerebrum.
M. A Portion of the Brain showing the Cerebrum.
N. A Portion of the Brain showing the Cerebrum.
O. A Portion of the Brain showing the Cerebrum.
P. A Portion of the Brain showing the Cerebrum.
Q. A Portion of the Brain showing the Cerebrum.
R. A Portion of the Brain showing the Cerebrum.
S. A Portion of the Brain showing the Cerebrum.
T. A Portion of the Brain showing the Cerebrum.
U. A Portion of the Brain showing the Cerebrum.
V. A Portion of the Brain showing the Cerebrum.
W. A Portion of the Brain showing the Cerebrum.
X. A Portion of the Brain showing the Cerebrum.
Y. A Portion of the Brain showing the Cerebrum.
Z. A Portion of the Brain showing the Cerebrum.

PLATE VIII

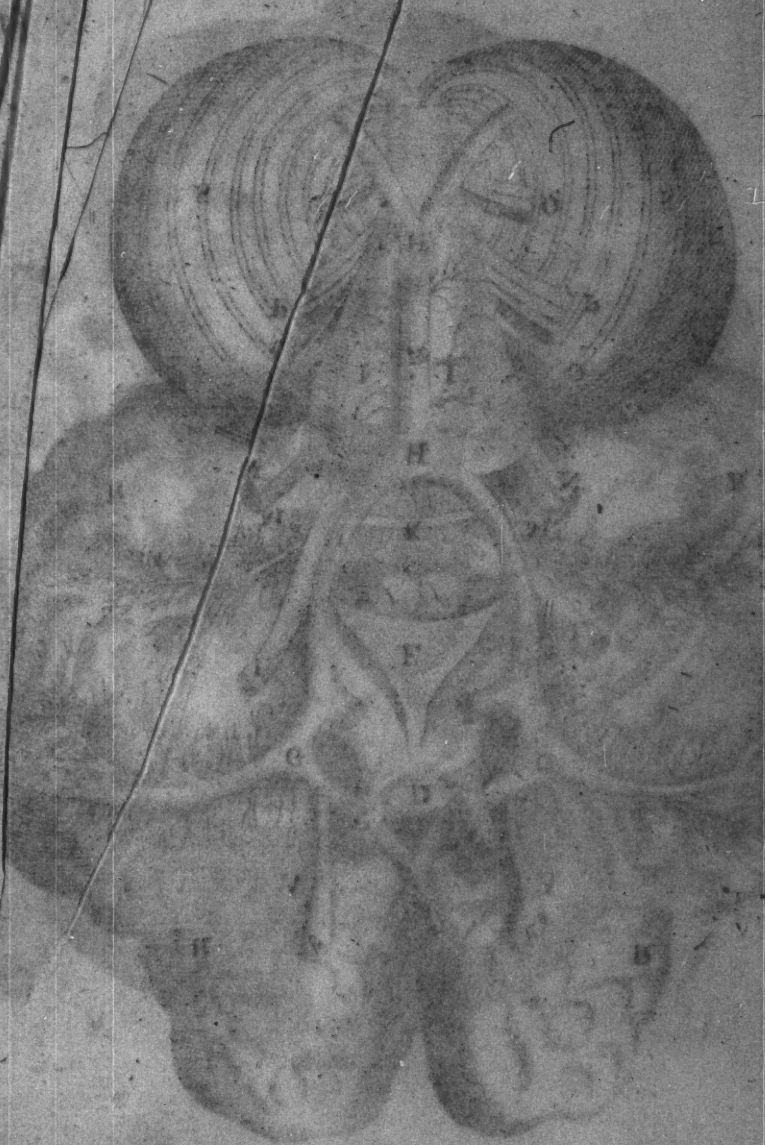
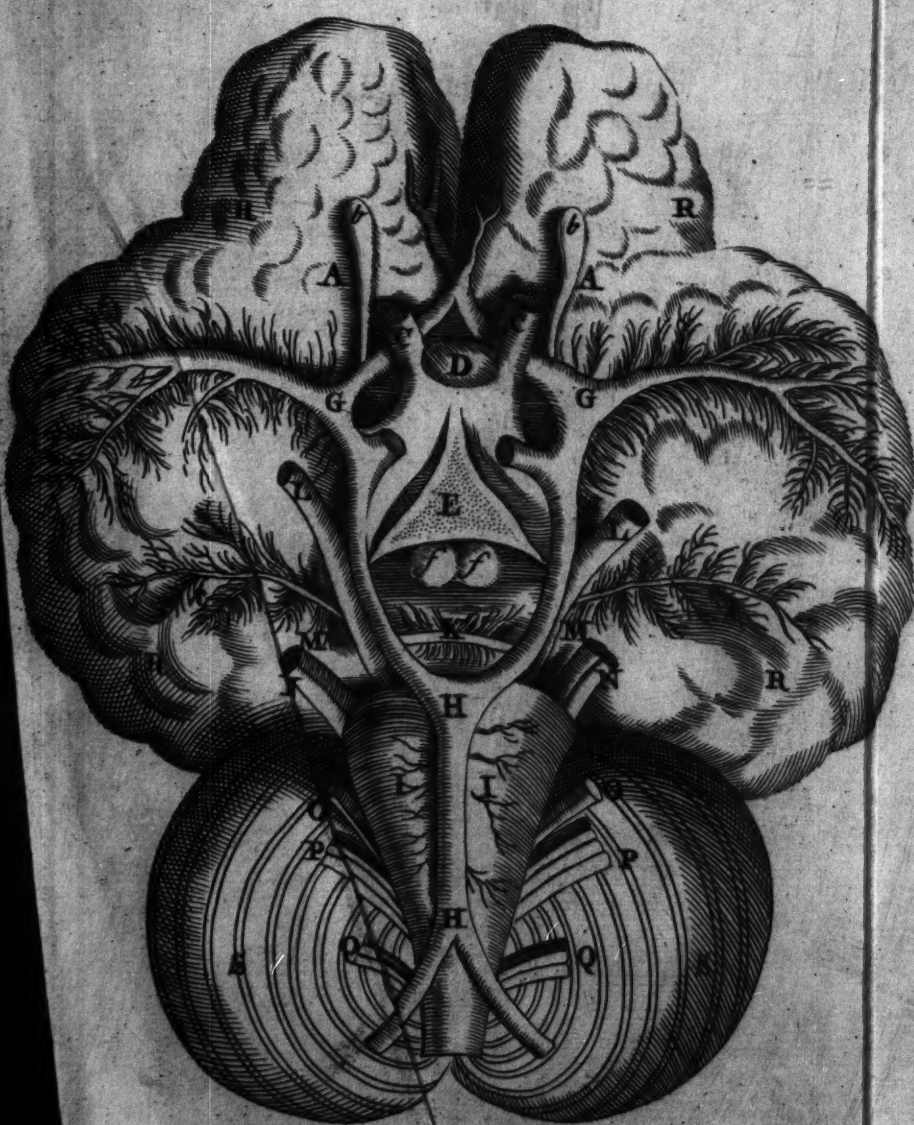
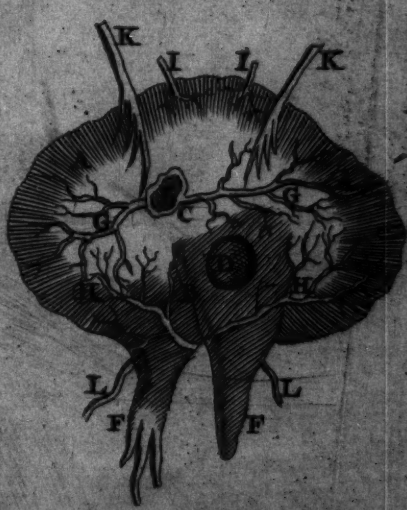
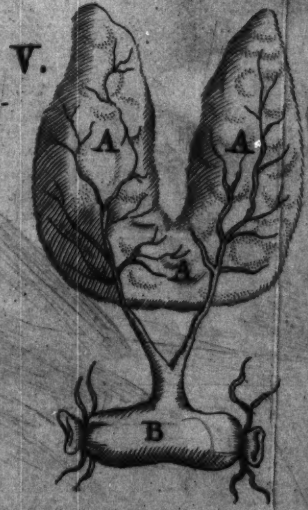


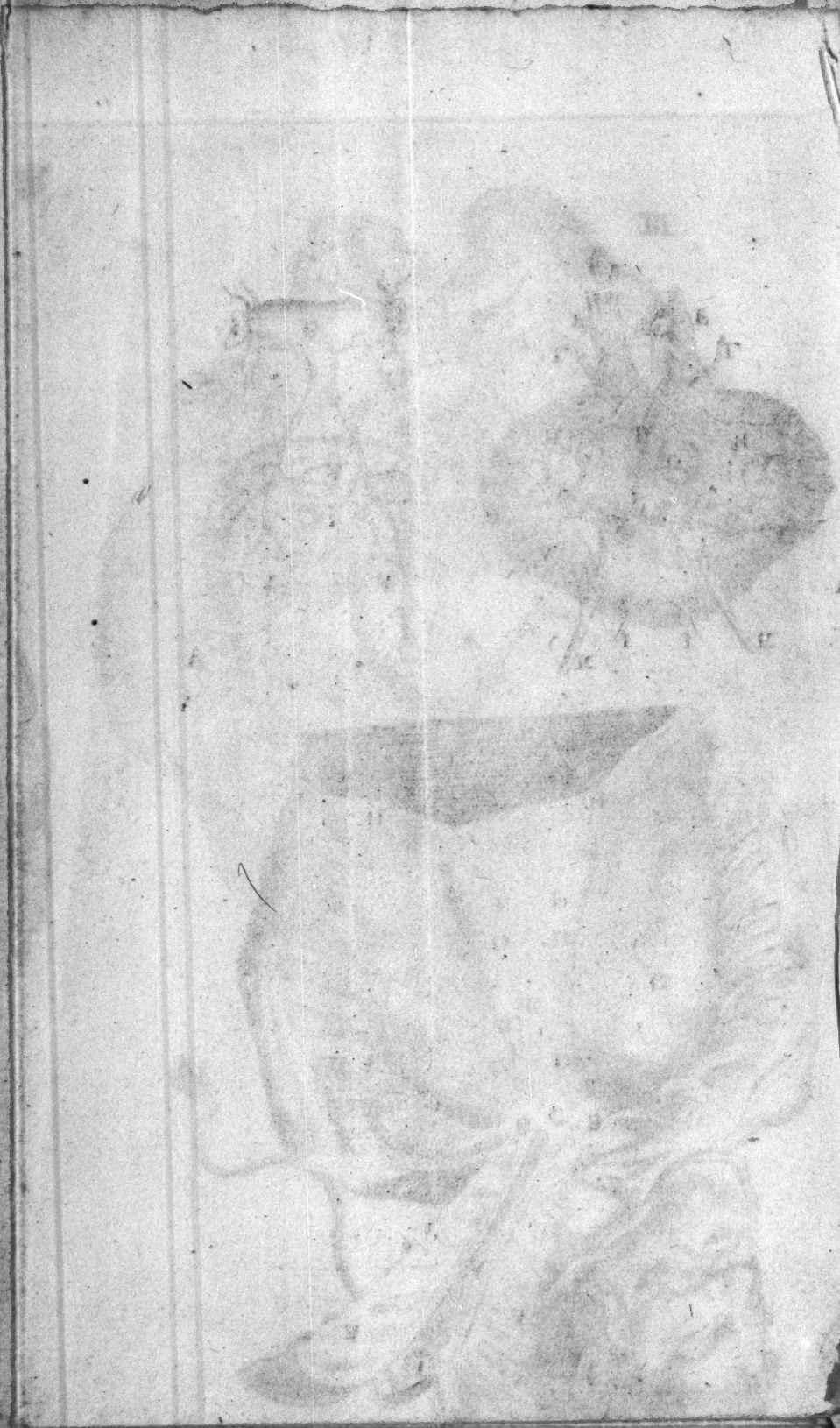
Fig: I.



II.







Fig

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Fig. I. **I**S a large transverse Section of the Brain, shewing the Parts under the *Fornix*, &c.

- A. A. The internal Part of the Brain.
- B. The *Fornix* raised and turn'd back.
- C. C. Its Expansions, or *Crura postica*.
- D. D. The Bottoms of the Anterior Ventricles.
- E. E. The Sides thereof.
- F. The anterior Hole of the third Ventricle, call'd the *Vulva*.
- G. The Chink shewing the third Ventricle.
- H. H. The Protuberances call'd the *Nates*.
- I. I. The others call'd the *Testes*.
- K. The *Glandula Pinealis*.

Fig. II. Is a View of the Basis or under Part of the Brain, and of the Origin of the Nerves arising from thence.

- A. A. The *Olfactory Nerves*.
- b. b. Their Papillary Proccesses.
- C. C. The Optic Nerves.
- D. The Pituitary Gland.
- E. The *Infundibulum*.
- f. f. Two white Glands.
- G. G. The greater Branch of the *Carotide Artery*.
- H. H. The *Cervical Artery*.
- I. I. The Beginning of the Spinal Marrow.
- K. k. k. Small Branches of Arteries forming the *Rete Mirabile*.
- L. L. The third Pair of Nerves.
- M. M. The Beginning of the fifth Pair.
- N. N. The Beginning of the sixth Pair.
- O. O. The Auditory Nerves, or eighth Pair.
- P. P. The Beginning of the ninth Pair.
- Q. Q. The Rise of the tenth Pair.
- R. R. The inferior Surface of the Brain.
- S. S. The striated Body of the *Cerebellum*.

Fig. III. Is another transverse Section of the Brain, with the Blood-Vessels first injected with Wax.

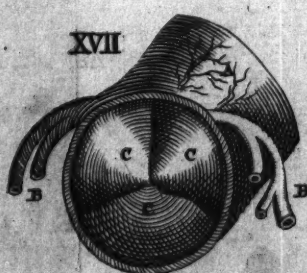
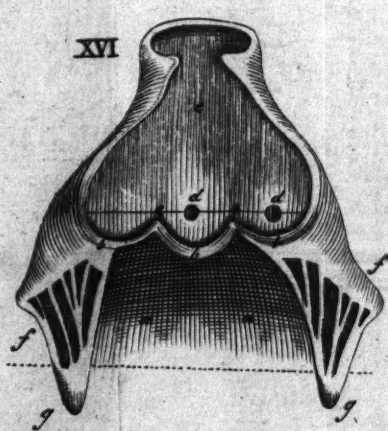
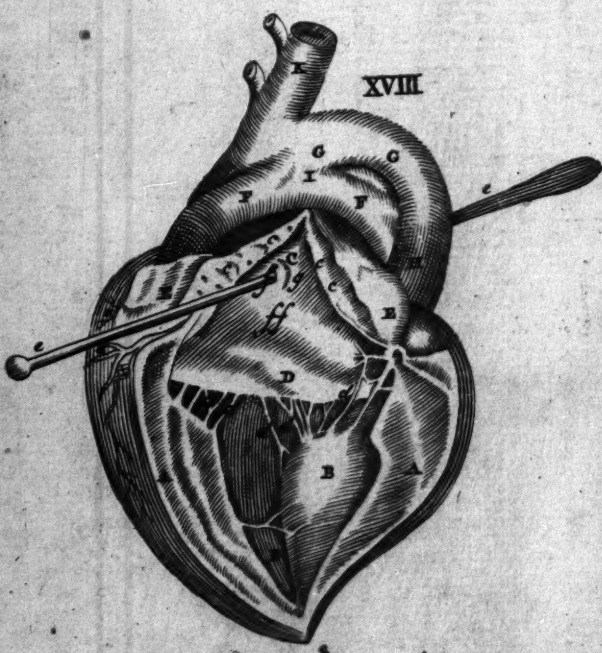
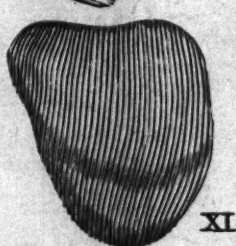
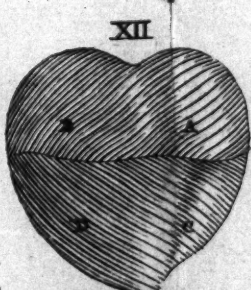
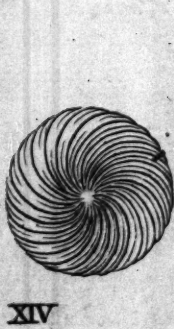
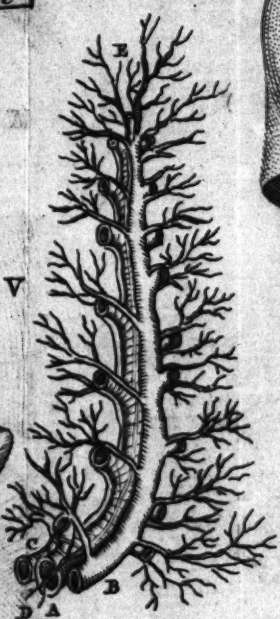
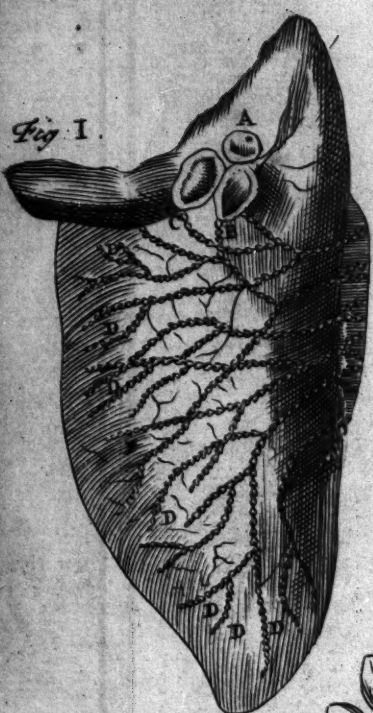
A. A. The

- A. A. The *Fornix* cut off and turned back.
 b. b. Its Roots at the beginning of the *Thal. Nervorum Optic.*
 c. c. The *Thalami Nervorum Opticorum.*
 d. d. Part of the *Crura Fornicis.*
 e. e. Part of the *Plexus Choroides.*
 f. The Place where the two *Plexus's* from each Side meet under the *Fornix.*
 g. g. Design the Place of the other Part of the *Plexus* under the *Crura Fornicis*, not to be seen here.
 b. b. Two large Veins proceeding from one Part of the *Plexus* to the other.
 i. i. The Trunks of several Arteries as they appear'd when cut off in the Dissection of the Brain.
 k. k. A Venous Branch from each Side entering the *Plexus.*
 l. The *Rima* of the third Ventricle.
 m. m. A long medullary Tract between the *Thal. Nerv. Opt.* and *Corpora Striata.*
 Δ. Δ. The *Corpora Striata* whole.
 n. n. The *Centrum Ovale* of *Vienssens.*
 O. The first *Sinus* of the *Dura Mater.*
 P. The *Torcular*, where the *Sinus's* meet.
 Q. Q. The lateral *Sinus's.*
 R. A large Vein entering the lateral *Sinus.*
 S. S. The *Cerebellum* cover'd with the *Dura Mater.*
 T. T. The Vertebral Arteries.
 V. V. The Vertebral *Sinus's.*
 W. The *Medulla Spinalis* with its Integuments.
 X. X. The *Style* supporting the large Veins of the *Plexus Choroides* in the third Ventricle.
 Y. Y. Two of the Cervical Nerves springing from the *Medulla Oblongata.*
 q. q. The Lympheducts of the *Plexus Choroides.*
 Fig. IV. Exhibits a View of what appears to the Sight on dissecting and raising the *Os Sternum.*

A. A. A. The

- A. A. A. The *Sternum*, or Breast-bone, cut off from the Cartilages of the Ribs, and rais'd up.
 B. B. The Mammary Veins and Arteries descending under the *Sternum*.
 C. The Gland call'd *Thymus*.
 D. D. The Sides of the *Mediastinum* separated from the *Sternum*.
 E. E. The Interval or Space between them.
 F. The Protuberance of the *Mediastinum*, where the Heart is situated.
 G. G. The Lungs in their natural Site.
 H. H. The Diaphragm.
 I. The *Cartilago ensiformis*.
 Fig. V. Shews the Situation of the *Thymus* at the *Larynx*.
 A. A. A. The Glandulous Substance of the *Thymus*.
 B. A Portion of a Jugular Vein, which sends forth two Branches through all its Substance.
 Fig. VI. Is a View of the Diaphragm and its Vessels.
 A. A. The fibrous or carnous Part of the Diaphragm.
 B. The hinder Part consisting of circular Fibres.
 C. Its middle tendinous Part.
 D. The Passage for the Gullet.
 E. Another Perforation for the *Vena Cava*.
 F. F. The two Appendices thereof, between which the Great Artery descends.
 G. G. The Phrenic Veins, from the *Cava*.
 H. H. The Phrenic Arteries, from the *Aorta*.
 I. I. Other small Blood-Vessels.
 K. K. The Nerves on the anterior Part, from the *Cervicals*.
 L. L. The Nerves on the posterior Part, from the *Intercostals*.





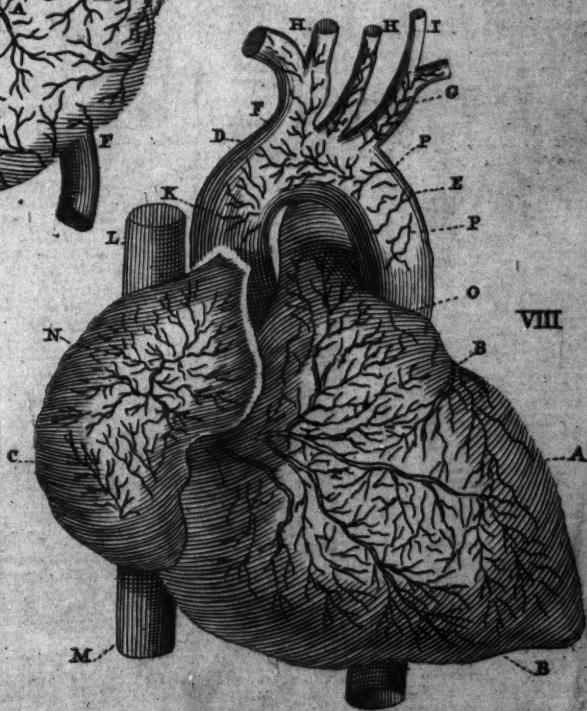
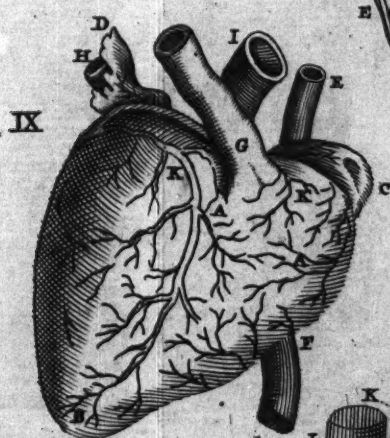
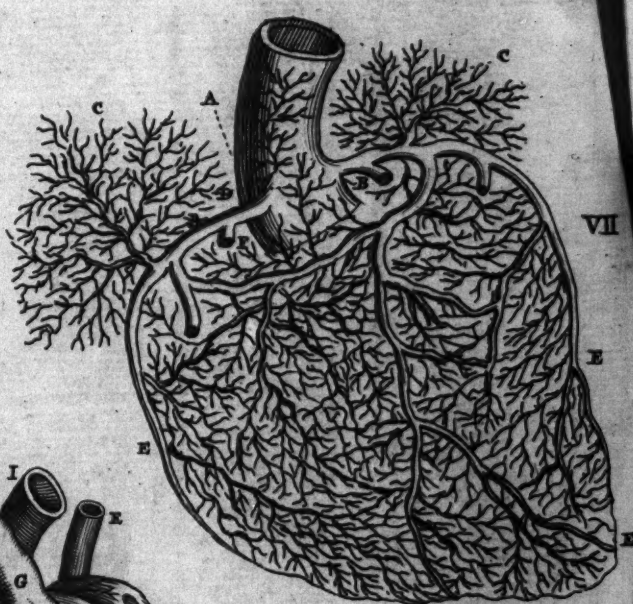
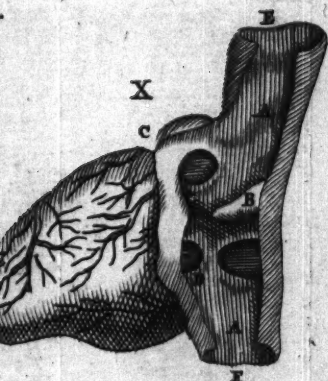
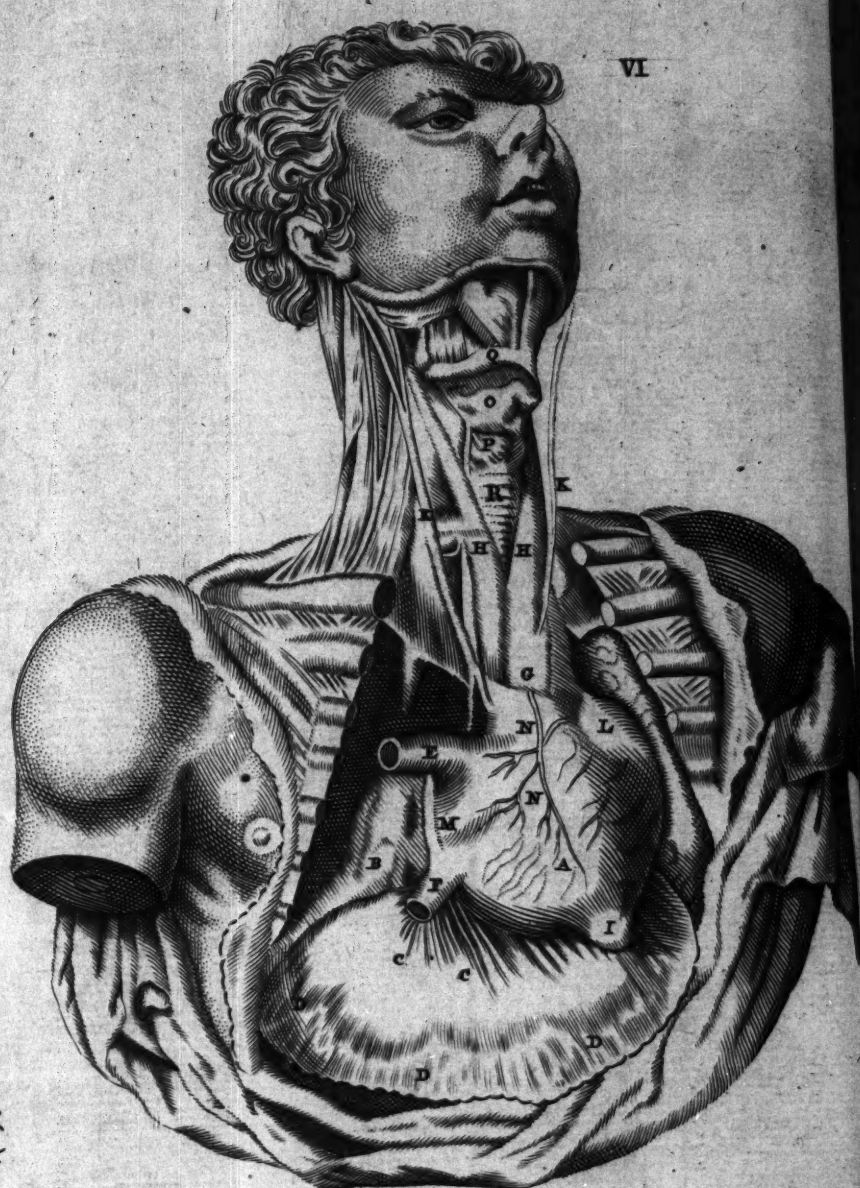


Fig.

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F.

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Fig.

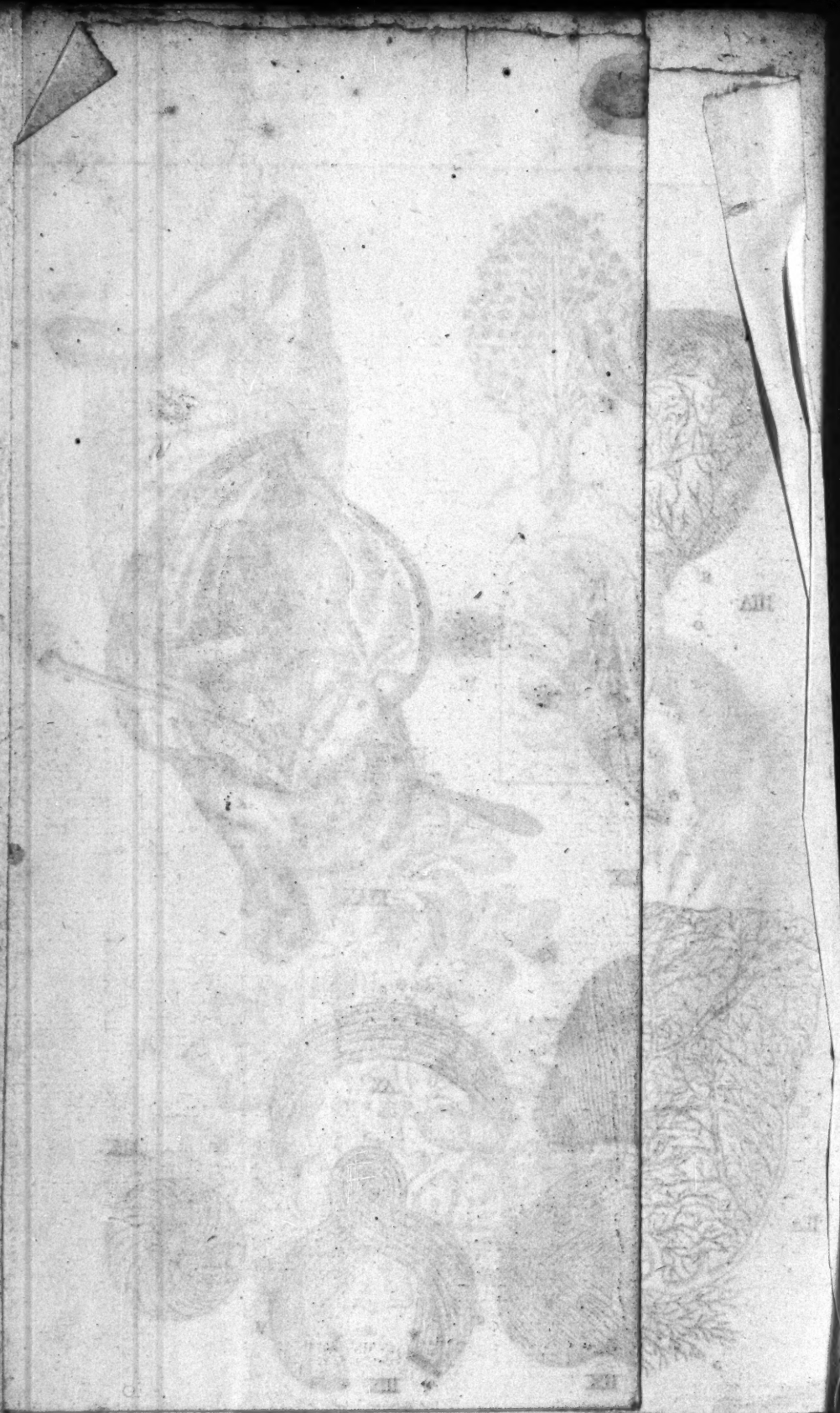
B. B.

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Fig.



D.

I.

D. I.

G. C.

H. F.

Fig.

B.

c. c.

d. d.

e. e.

Fig.

Fig. I. **S**hews one whole Lobe of the Lungs, with the Lympheducts on its Superficies.

- A. The Orifice of the *Trachea* cut off.
- B. The Orifice of the subjacent *Pneumonic* Artery.
- C. The Orifice of the *Pneumonic* Vein.

D. D. D. The Lympheducts dispersed through the Surface of this Lobe.

Fig. II. Exhibits a View of the Ramifications of the *Aspera Arteria*, injected with a Liquor distending the small *Lobules*, drawn from the Life.

A. The Trunk of the *Trachea* cut off.

B. B. Its inner Part laid open.

a. a. a. The Holes leading into the Branches.

b. b. b. The strait muscular Fibres within.

C. The smaller End of this Trunk entire, that the annular Cartilages may be seen.

D. D, &c. The *Tracheal* Branches going off the Trunk.

E. E. Two Branches slit, or laid open, that the Holes and strait Fibres may be seen.

F. F. Some Branches cut off that the others might have Room to extend themselves.

G. G. &c. The *Lobules* hanging like Grapes on the *Bronchia*, or *Tracheal* Branches.

H. H. &c. The Sanguiferous Vessels creeping through the Superficies of those *Lobules*.

Fig. III. Expresses a Piece of Pulmonary Lobe blown up to shew the *Lobules* as they lie in the Substance of the Lungs.

A. A Piece of a *Tracheal* Branch.

B. B. B. The *Lobules* growing thereto.

c. c. c. c. The Blood Vessels creeping through them.

d. d. d. d. The membranous Interstices of the *Lobules*.

e. e. e. e. The Blood Vessels creeping through the same.

Fig. IV. Represents the Divarication of a *Tracheal* Branch in the *Lobules*, and its minute Ramifications into the Tubes and Orbicular Bladders.

A. The Stem of a *Tracheal* Branch.

T

b. b. The

- b. b. The lesser Twigs proceeding from that Stem.
 c. c. c. c. The very small Globules or Bladders in Clusters,
 into which the *Tracheal* Twigs enter.
 d. d. The Sanguiferous Vessels which nourish the *Lobule*.

Fig. V. Is the View of a *Tracheal* Branch attended with its proper Vessels.

- A. The Branch of the *Trachea*.
 B. The *Vena Arteriosa*, or *Pulmonary* Artery.
 C. The *Arteria Venosa*, or *Pulmonary* Vein.
 D. A Nerve from the *Par Vagus*, creeping along the *Tracheal* Branch.
 E. The Inosculations of the Blood Vessels.

Fig. VI. Exhibits a View of the natural Situation of the Heart in the Body, and the Egress of certain Vessels.

- A. The Heart included in the *Pericardium*.
 B. B. The Lungs.
 C. C. The Nervous Part of the Diaphragm.
 D. D. D. The Carnous Part thereof.
 E. The ascending Trunk of the *Vena Cava* cut off.
 F. The descending Trunk thereof.
 G. The *Aorta* arising from the Heart.
 H. H. Its two *Carotidal* Branches.
 I. The *Mucronated* Point of the Heart.
 K. K. Nerves of the 6th Pair proceeding to the Heart.
 L. The Left Auricle.
 M. The Right Auricle.
 N. The Vessels of the *Pericardium*.
 O. The *Cartilago Scutiformis*, or *Tbyroides*.
 P. The first Pair of Muscles of the *Larynx*.
 Q. The *Os Hyoides in situ*.
 R. The *Aspera Arteria*, or Wind-pipe.
 S. The Axillary Artery, near the beginning of which the Right Recurrent Nerve ariseth.

Fig. VII. Shews the Blood Vessels which are spread through and nourish the Substance of the Heart and Auricles,

A. The

- A. The Root of the *Aorta*, out of which spring
- B. B. The Coronary Arteries on each Side.
- C. C. The Arteries running through the Auricles.
- D. The little Branches springing from the *Coronary*, and dispersed through the Coats of the Root of the *Aorta*.

E. E. E. Numerous Sprigs of Arteries spread through the Substance of the Heart.

F. F. F. The Trunks of those *Coronaries* cut off, which are design'd for the other Side of the Heart.

Fig. VIII. A. The Heart of a Boy about ten Years old.

- B. B. The Arteries spread through its Substance.
- C. The Right Auricle.
- D. The Trunk of the *Aorta* arising out of the Left Ventricle of the Heart.
- E. The descending Trunk of the *Aorta*.
- F. The Right *Subclavian* Artery.
- G. The Left *Subclavian*.

H. H. The two *Carotide* Arteries.

I. The Left *Cervical* Artery.

K. Little Branches of Arteries supplying Blood to the Coats of the Root of the *Aorta*.

L. The ascending Trunk.

Fig. IX. Is another View of the Heart, &c.

A. A. The Basis of the Heart.

B. Its *Mucro*, or Point.

C. Its Right Auricle.

D. Its Left Auricle.

E. The superior Trunk of the *Vena Cava*.

F. The inferior Trunk thereof.

G. The *Pulmonary* Artery.

H. The *Pulmonary* Vein.

I. The *Aorta*, or Great Artery.

K. K. The *Coronary* Veins and Arteries.

Fig. X. Sheweth, that on the Inside A A of the *Vena Cava* E F, there is (in Man) provided a Protuberance B, composed of the subjacent Fat;

against which the Blood descending from E, and the ascending Current from F, doth strike, and thereby each Course is directed into the Right Auricle C, and prevented from rushing upon, and confounding each other; and consequently from destroying the Circulation, as it must otherwise have done in Man's *erect Posture*.

Fig. XI, Sheweth the outmost and strait Fibres of the Heart, destin'd for the Contraction of the Right Ventricle.

Fig. XII, Shews the Course of the Oblique Muscles of the Heart A and B, which run from Top to Bottom; and another Order of Oblique Muscles C and D, crossing the former; by means whereof, the Ventricles of the Heart must necessarily become narrower in their Contractions.

Fig. XIII, The surprising Form of Fibres A B, which running on all Sides from Top to Bottom, encompass the Heart at the Point C, and by their Contraction shorten and draw up the Left Ventricle.

Fig. XIV, Is a Representation of the Form of the last mentioned Fibres on the Point of the Heart.

Fig. XV, A Row of Fibres A B C, which assist the lateral Contractions of the forementioned Oblique Fibres, and perform this Function by encompassing the Heart cross-ways, and contracting the same.

Fig. XVI, Shews the *Semilunar Valves* at the Rise of the *Aorta* out of the Left Ventricle.

a. a. Part of the Left Ventricle laid open.

b. b. b. Three *Semilunar Valves*, which yield an Exit to the Blood going out, but are shut by the re-fluent Stream.

c. The Trunk of the *Aorta* laid open,

d. d. The

- d. d. The Orifices of two *Coronary Arteries*.
- e. e. The Root of the *Aorta* where it is united to the Tendon of the Heart.
- f. f. The *Mitral Valves* turn'd aside that the *Semilunar Valves* might appear.
- g. g. The Ends by which they are fasten'd to the Heart in their natural State.

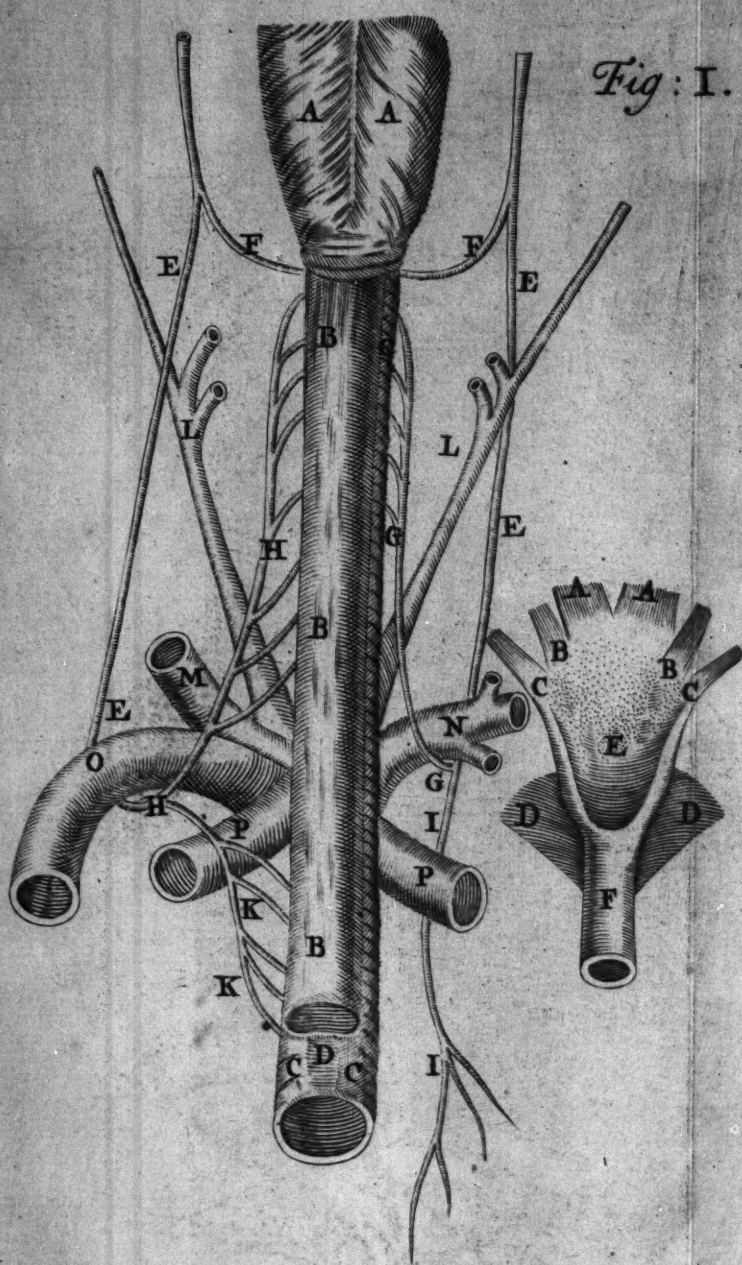
Fig. XVII. A Trunk of the *Aorta* cut off at the Root.

- B. B. The two *Coronary Arteries*.
- C. C. C. The three *Semilunar Valves* closed to hinder the Recourse of the Blood out of the *Aorta* into the Ventricle.

Fig. XVIII. Shews the Left Ventricle and Auricle of the Heart dissected.

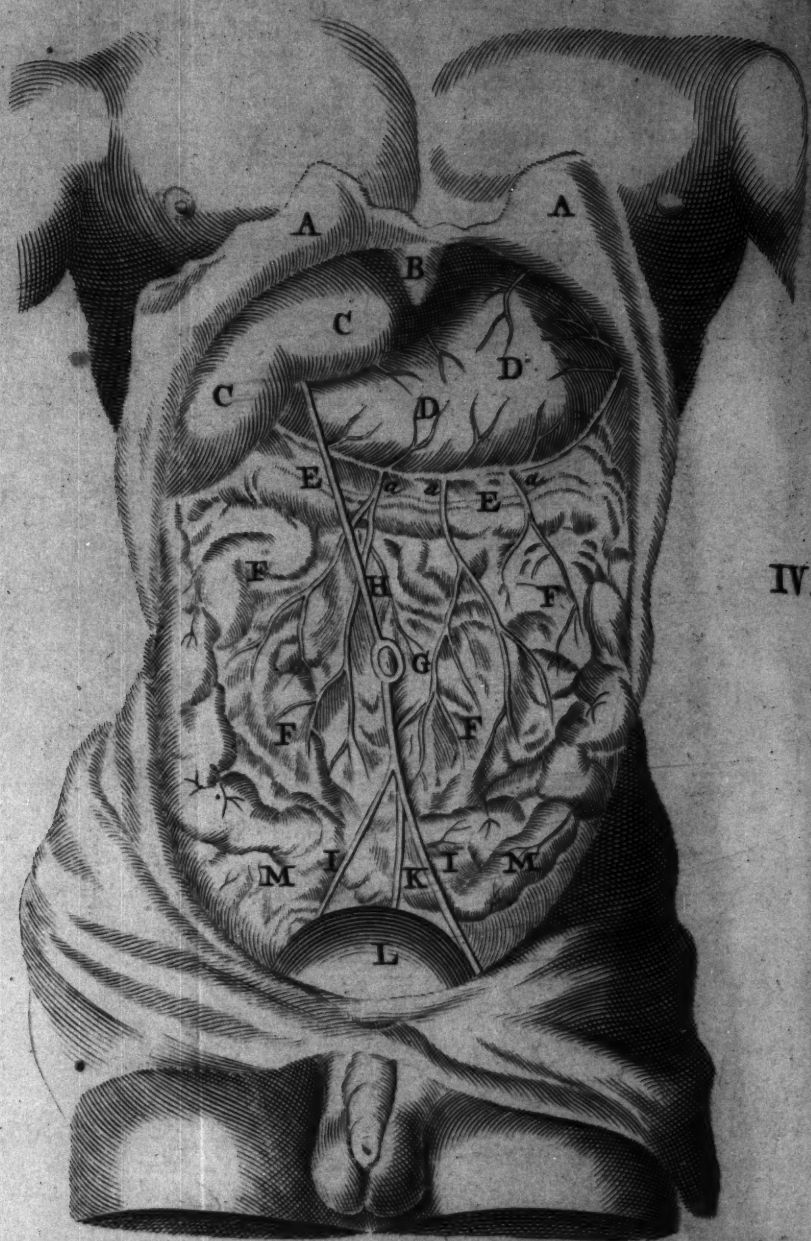
- A. A. An Incision of the Heart thro' the Left Ventricle.
- B. B. An exact View of the Ventricle.
- C. The Exit of the *Style*, pass'd thro' the *Anastomosis*, from the Right to the Left Ventricle.
- D. A *Valve* placed by the Mouth of the *Aorta*.
- E. E. The Left Auricle dissected.
- F. F. The *Arteria Venosa* passing out of the Right Ventricle.
- G. G. The ascending Part of the *Aorta*.
- H. The descending Part near the Spine.
- I. The Connection of the *Arteria Venosa* and *Aorta*.
- K. The Trunk of the *Aorta* ascending to the Arms and Throat.
- a. a. Small Twigs of the *Coronary Veins*.
- b. b. The *Coronary Artery* dissected.
- c. c. c. An Incision of the Left Auricle quite to the *Venous Artery*.
- d. d. d. d. The small carnous Fibres, or Strings in the Ventricle, connecting the upper to the lower Parts.
- e. e. The *Style* mention'd above at C.
- f. f. f. Certain small Holes, thro' which some suppose the Blood flows from the Right to the Left Ventricle.
- g. A small *Valve* placed at the *Anastomosis* f.

Fig: I.



III.





IV.



V.

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Fig

A.A.

B.B

Fig. I. Exhibits a View of the *Oesophagus*, *Trachea*, Recurrent Nerves, and other Vessels in the Neck.

- A. A. The Muscle constringing the *Oesophagus*.
- B. B. B. The *Oesophagus*, or Gullet.
- C. C. C. The *Trachea*, or Wind-pipe, lying under the Gullet.
- D. The Membrane between the *Trachea* and *Oesophagus*.
- E. E. E. E. Nerves of the sixth Pair.
- F. F. Nerves of the Tongue.
- G. G. The Right Recurrent Nerve bending round the Humeral Artery.
- H. H. The Left Recurrent Nerve about the *Aorta*.
- I. I. A Nerve going to the Stomach and *Diaphragm*.
- K. K. A Nerve descending to the *Diaphragm*.
- L. L. The Jugular Arteries.
- M. The Left Humeral Artery.
- N. The same on the Right Side.
- O. The *Aorta*.
- P. P. Trunks of Arteries descending to the Lungs.

Fig. II. Is the Upper-part of the *Oesophagus* with its Muscles.

- A. A. The *Musculi Cephalopharyngæi*.
- B. B. The *Musculi Sphenopharyngæi*.
- C. C. The *Musculi Stylopharyngæi*.
- D. D. The *Sphincter Gulæ*, or *Oesophagæus* drawn aside.
- E. The internal Face of the *Oesophagus*.
- F. The Part or Pipe descending to the Stomach.

Fig. III. Exhibits a View of the *Peritonæum*, its Processes, &c.

- A. A. A. A. The four common Integuments of the Body dissected and laid open.
- B. B. B. B. The Muscles of the *Abdomen* in like manner dissected.
- C. C. The *Os Sternum*.
- D. The *Cartilago Ensiformis*.

E. E. E. E. The

E. E. E. E. The whole Face of the *Peritonæum* covering the *Abdomen*, through which the subjacent *Viscera* faintly appear.

F. F. The Adumbration of the Liver through the *Peritonæum*.

G. G. The obscure Appearance of the Stomach.

H. The faint Form of the Spleen in the Left Side.

I. I. I. I. The anfractuary Circumvolutions of the Guts obscurely appearing through this Membrane.

K. The *Umbilicus*.

L. The umbilical Vein lying in a Chancel of the *Peritonæum*, of which it is here clear'd.

M. M. Two umbilical Arteries.

N. The *Urachus*.

O. O. Vessels distributed to the Stomach and *Omentum*.

P. P. The Processes of the *Peritonæum*, containing the *Vasa Præparantia*.

Q. Q. The Cremasters of the *Testes*.

R. R. The *Testes* divested of the *Scrotum*.

S. The *Os Pubis*.

T. The *Penis*.

V. The Rise of the *Epigastric Vein*.

X. The *Epigastric Artery*.

Y. A Branch from the *Epigastric Vein*.

Z. A Branch from the *Epigastric Artery*.

Fig. IV. Expresses the Situation of the *Intestines*, *Omentum*, and *Umbilical Vessels* to the Life.

A. A. The Integuments of the *Abdomen* dissected and turned aside, that the internal Parts might come to view.

B. The *Cartilago Ensiformis*.

C. C. The gibbous Part of the Liver.

D. D. The Stomach.

E. E. Part of the *Colon* under the Stomach.

F. F. The superior Membrane of the *Omentum* annex'd to the Bottom of the Stomach.

G. The *Umbilicus*.

H. H. The

- H. H. The *Umbilical* Vein.
- I. I. The two *Umbilical* Arteries.
- K. The *Urachus*.
- L. The Bladder.
- M. M. The Intestines.
- a. a. a. The Vessels dispersed over the Stomach and
Omentum or Caul.
- Fig. V. Shews the Site of the *Mesentery*, *Intestines*, *Glands*,
&c. under the *Omentum*.
- A. A. A. The inferior Membrane of the *Omentum*, whence
the *Colon* is suspended.
- B. B. Part of the *Colon*.
- C. C. The *Ligamentum Coli*.
- D. D. D. D. The *Mesentery*.
- E. E. E. The lesser *Glands* of the *Mesentery*.
- F. The great Gland call'd *Pancreas Asellii*.
- G. G. G. The Vessels of the *Mesentery*.
- H. H. The *Intestines* small and large.
- I. The Bottom of the Bladder.
- K. K. The *Umbilical* Arteries.
- L. The *Urachus*.
- M. The Navel cut off and hanging down.
- a. a. a. The *Epiploic* Vessels.

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PLATE XI

- 1. The Human Ventricle
- 2. The two Ventricles of the Heart
- 3. The Ventricle
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PLATE XII

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Fig. I. **I**S a View of the Stomach and its Parts.

- A. Part of the *Oesophagus*.
- B. The Orifice of the Stomach.
- C. The other Orifice, call'd *Pylorus*.
- D. The *Antrum* of the *Pylorus*.
- E. A Portion of the *Duodenum* continued from the *Pylorus*.
- F. The Sanguiferous Vessels on the Upper-part of the Stomach.
- G. G. The nervous longitudinal Fibres of the exterior Coat of the Stomach.
- H. I. Nerves from the *Par Vagum*, plentifully spent on the Mouth of the Stomach.

Fig. II. Is a View of the Middle Coat of the Stomach, being divested of its exterior nervous Coat.

- a. a. Part of the *Oesophagus*.
- b. b. The circular carnos Fibres which straiten and contract

- A. The Mouth of the Stomach.
- B. The *Pylorus*.
- C. The Orifice and *Antrum* of the *Pylorus*, which are straiten'd and shut by the circular Fibres.

D. D. D. The circular Fibres encompassing the Stomach depth-ways.

- E. The Top of the Stomach where the Fibres arise, and towards which they contract it.

Fig. III. Is a View of the Stomach turn'd Inside outward, that the downy Substance, the Folds and Wrinkles may appear.

- A. The Mouth, or Left Orifice.
- B. The *Antrum* of the *Pylorus*, where the Coats are thicker.

- C. The Right Orifice, or *Pylorus*.

D. D. The Top of the Stomach.

E. E. E. E. The Sides, End, and Bottom, expressing the downy Crust, Wrinkles, and Furrows therein to the Life.

Fig. IV. Is a Piece of the inmost or nervous Coat, in which the downy Part being removed, its concave Superficies appears with a thick and fine Branchery of Vessels.

Fig. V. Shews a Piece of the downy Coat, in which appear numerous Glandules on that Superficies, adhering to the nervous Coat.

Fig. VI. Is a Representation of the Disposition and Connection of the Stomach and Intestines express'd to the Life.

- A. The *Oesophagus*, with the Nerves *b. b.*
- B. The Mouth of the Stomach.
- C. The *Pylorus*.
- D. D. The exterior Coat laid open to shew
- E. E. The Middle Coat of circular Fibres.
- G. A Portion of the *Duodenum*.
- b.* The *Ductus Choledochus*, or Bile-Duct.
- I. I. I. I. The *Intestines*, as well the *Jejunum* as *Ileum*, with the Vessels creeping through them.
- K. The Appendage, call'd the *Cæcum* or Blind Gut.
- L. L. L. L. The *Colon*.
- M. The *Valve* open at the Beginning of the *Colon*.
- m. m. m. The *Ligamentum Coli*, which makes it full of Cells.
- N. N. The *Intestinum Rectum*, or strait Gut.
- O. The *Sphincter Ani*.
- P. P. The Muscles call'd *Levatores Ani*.

Fig. VII. Shews the *Venæ Lactææ*, *Ductus Chyliferus*, *Vasa Lymphatica*, and Course of the *Chyle* to the Heart in a Dog.

- A. The Heart.
- B. The *Vena Cava*.
- C. The *Aorta* with its intercostal Branches *c. c. c.*
- D. An Emulgent Artery.
- E. The Left
- F. The Right *Iliac* Artery.
- G. G. The *Mesentery*.

H. The

- H. The Duct of the Gland K.
 I. I. The Blood Vessels dispersed thro' the *Mesentery*.
 K. A great Gland which receives the Contents of
 I. I. The *Venæ Lactææ*, which bring the *Chyle* from
 L. L. The *Intestines* annexed to the *Mesentery*.
 m. m. m. The Nerves of the *Mesentery*.
 n. n. Small Ducts which carry the *Chyle* to
 O. The *Receptaculum Chyli*.
 r. r. The *Ductus Chyliferus*, by which the *Chyle*
 ascends to
 u. The *Subclavian Vein*, and from thence to the
 Heart.

Note, The Vessels *q q* and *t t* are the *Lymphæducts* which attend the *Lactæals*; which latter are not to be seen but when turgid with *Chyle* immediately after Concoction, and therefore not to be expected in human Bodies which are dead and cold before Dissection.

Fig. VIII. Shews the *Semilunar Valve* placed at the Orifice of the *Ductus Chyliferus* in the *Vena Subclavia*, to prevent the recurrent Blood from descending therein.

- a. b. The superior Part of the *Ductus Chyliferus*.
 b. Its Orifice in the *Subclavian*.
 c. c. The common *Valves*, which are here render'd visible by squeezing the *Chyle* back again upon them with the Finger *b*.
 d. The Part by that means made empty.
 e. The *Jugular Vein*, joining
 f. g. The *Left Subclavian Vein*, laid open, to shew
 i. The Position of the *Semilunar Valve*, placed at the Orifice of the *Duct*, which is shut by the recurrent Stream from *f* and *e*, and yet affords an easy Passage for the *Chyle* and *Lympha* to concur and mix therewith.

Fig. IX. Shews

Fig. IX. Shews the Insertion of the *Ductus Chyliferus* into the *Subclavian*, together with the *Jugular Vein* in an human Body.

a. a. a. A threefold Insertion of the *Ductus Chyliferus* into the *Subclavian*, tho' sometimes 'tis by one and sometimes by many Orifices.

b. b. The *Subclavian Vein*.

c. The *Jugular Vein* entering the *Subclavian* just over the Insertion of the *Chyliferous Duct*, which makes the aforesaid *Valve* more necessary here to inhibit the Entrance of the Blood into the said *Duct*.

d. d. The Left *Clavicle*, from under which the Branch of the *Duct* emerge to Sight in this Figure.

Fig. X. Presents a View of the Vessels of the *Mesentery* and some of the *Viscera* of the *Abdomen*.

A. A. The gibbous or convex Part of the *Liver*.

B. The concave Part thereof.

C. The *Gall-Bladder*.

D. The *Meatus Biliaris*.

E. A Portion of the *Duodenum*.

F. The *Pancreas* in its natural Site.

G. G. The *Splenic Vessels* laid bare by flitting the *Pancreas*.

H. The *Spleen* in the Left *Hypochondrium*.

I. I. The *Mesenteric Branch* of the *Vena Porta*.

K. The *Mesenteric Artery*.

L. A Nerve of the sixth Pair spent on the *Mesentery*.

M. M. &c. The *Intestines* connected with the *Mesentery*.

N. The Beginning of the *Jejunum*.

O. O. O. O. The *Mesentery*.

P. P. P. P. The *Veins*, *Arteries*, *Nerves*, and *Lacteals* of the *Mesentery*.

Q. Q. Q. Q. The small Glands dispersed thro' the *Mesentery*.

Fig. XI. Is a View of the *Pancreas*.

A. A. A. A. The *Parenchymous Substance* of the *Pancreas* laid open.

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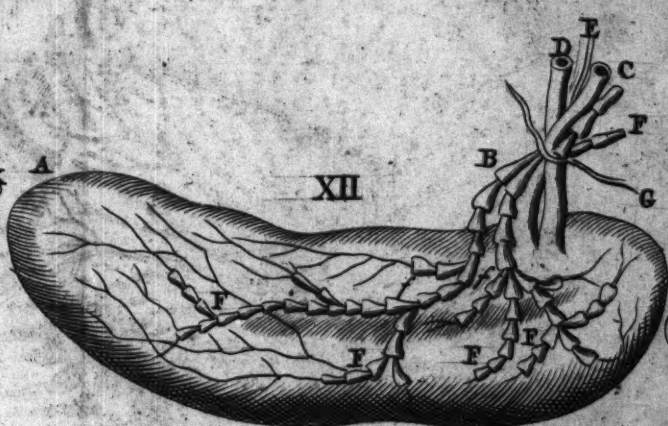
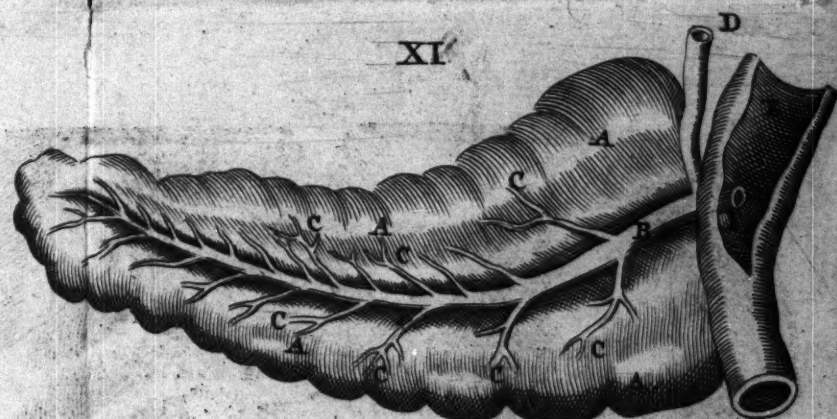
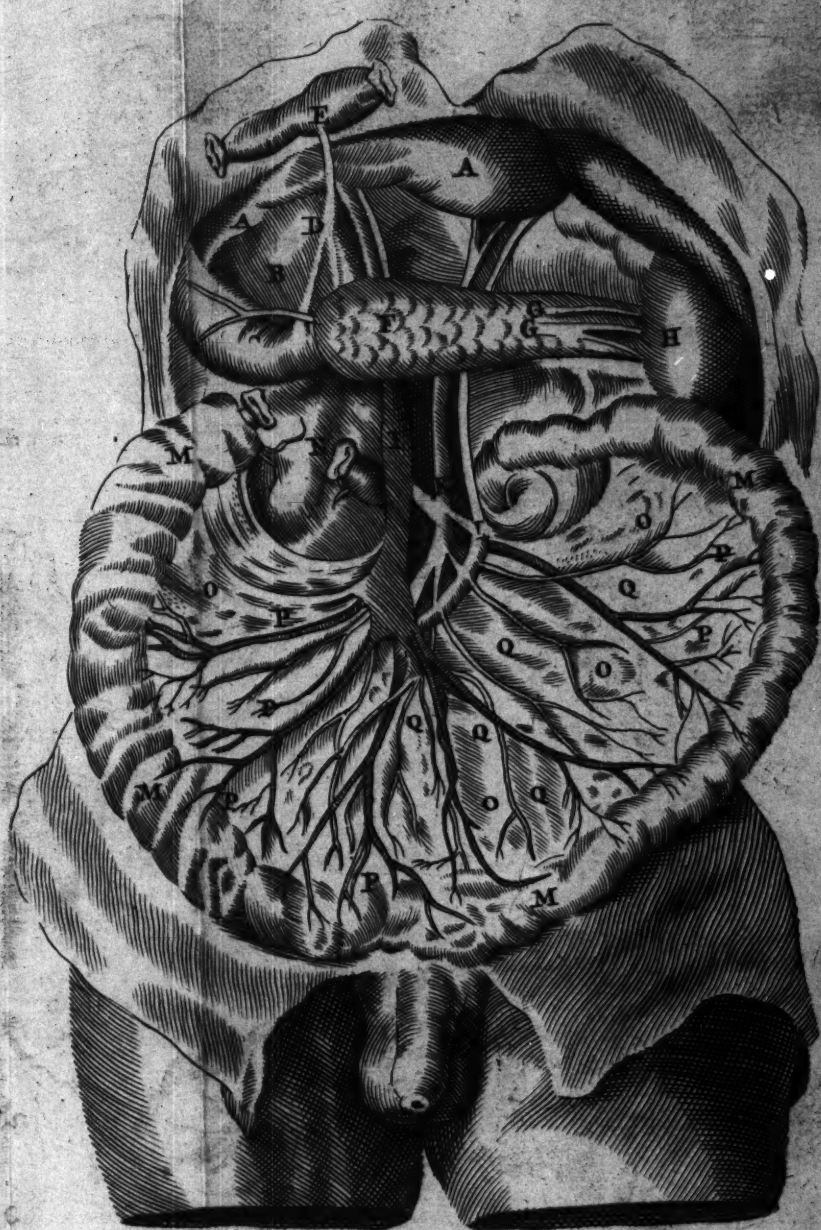
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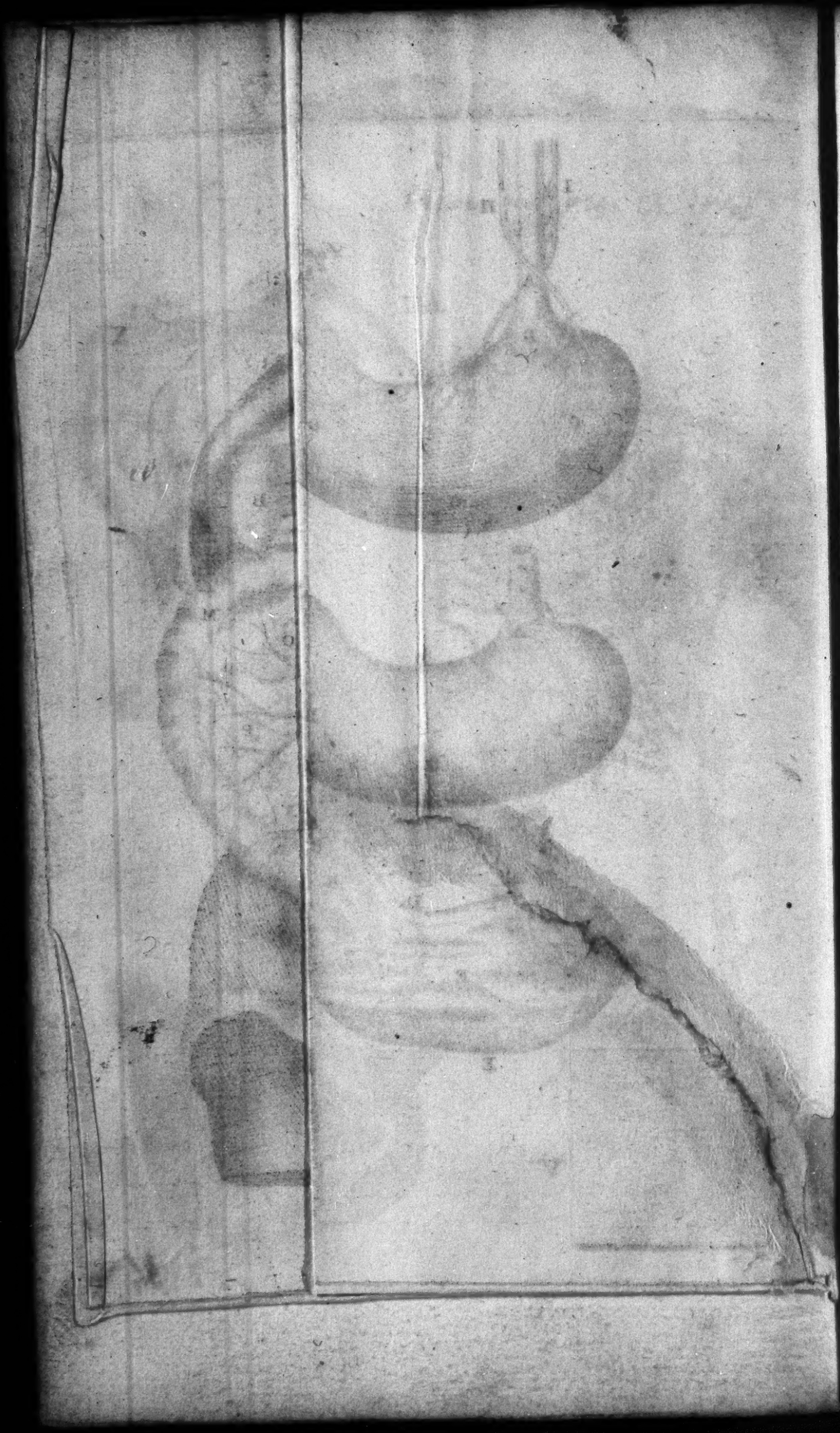
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- B. The Trunk of the *Ductus Pancreaticus*.
- CCCCC. The Branches thereof.
- D. The *Ductus Biliaris* joining the *Duct. Pancreat.*
- E. The *Duodenum* opened.
- F. The Orifice of Ducts discharging their Contents therein.

Fig. XII. Represents the *Lymphatics* and Sanguiferous Vessels of the Spleen tied.

- A. The Spleen of a Calf.
- B. The Place where the Vessels are tied.
- C. The *Splenic Vein*.
- D. The *Splenic Artery*.
- E. The *Splenic Nerves*.
- E. E. E. The *Lymphatics* on the Superficies of the Spleen.
- f. f. f. The *Valves* of those Vessels preventing the Return of the *Lympha*.

G. The Ligature.

Fig. XIII. Is a View of an Ox's Spleen cut open, to shew the Course of the Vessels.

- A. A. The proper Coat of the Spleen.
- B. B. The same Coat dissected and turn'd back, to shew the Progress and *Plexus* of the Vessels.
- C. A Portion of the *Vena Porta*.
- D. Its Left *Splenic Branch*.
- E. The same open'd near the Spleen, that the *Valve* *i* may appear.
- F. F. &c. A Portion of the *Splenic Artery*.
- G. G. &c. The Twigs which run off therefrom through the Substance of the Spleen.
- H. H. &c. Certain nervous Fibres wonderfully complicated, among which the Arterial Branchery is seen.
- I. The *Valve* in the *Splenic Branch* opening outward to the *Porta*.
- K. The little Holes which appear in the *Ramus Splenicus*, leading from the Substance of the Spleen.
- L. A Nerve running along the *Splenic Artery*.

I. A Nerve running along the Spleen Artery.

K. The ducts which appear in the Ramus Spleen.

L. The Nerve in the Spleen Branch opening outward

H. H. & C. Certain narrow Fibres wonderfully complicated

G. G. & C. The Fibres which run off in various directions through the

E. The same opened near the Spleen, that the Nerve

D. In Left Spleen Branch.

C. A Portion of the Nerve Artery.

B. R. The same Contracted and turned back, to show

A. A. The proper Coat of the Spleen.

XIII. Is a View of an Ovarian Spleen cut open, to show

C. The Ligament.

A. A. The Nerve of the Ligament.

E. E. E. The Ligament on the Surface of the Spleen.

D. The Spleen Artery.

C. The Spleen Vein.

B. The Place where the Veins are tied.

A. The Spleen of a Cat.

XII. Represents the Spleen and Surrounding Vessels of the Spleen.

F. The Ovary of a Cat dissecting their Contents

E. The Ovary opened.

D. The Ovary joined the Duct. Pancreas.

C. C. C. C. The Branches thereof

B. The Trunk of the Duct Pancreaticus.

PLATE XII

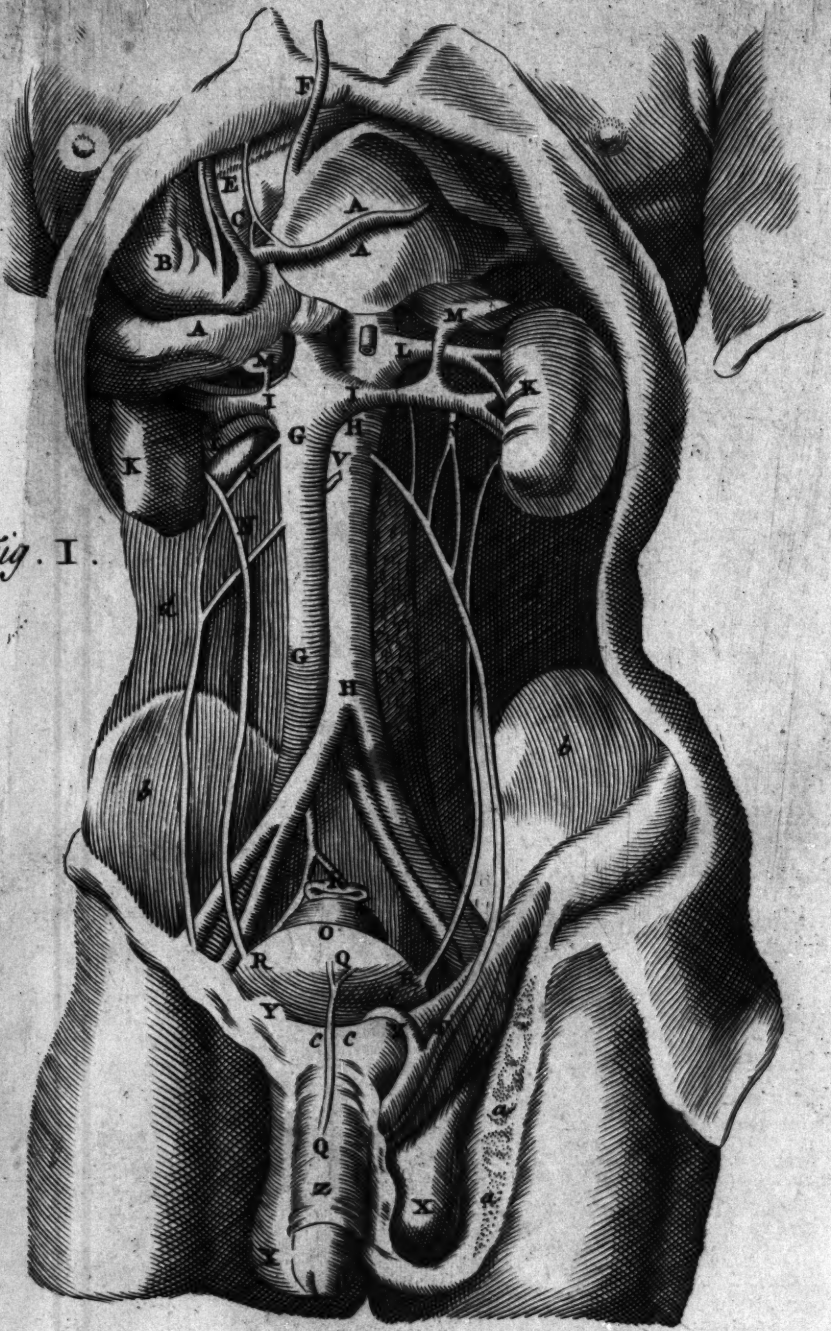
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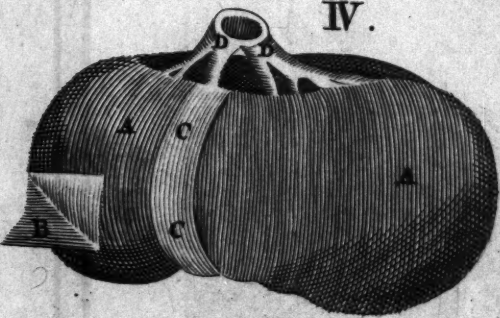


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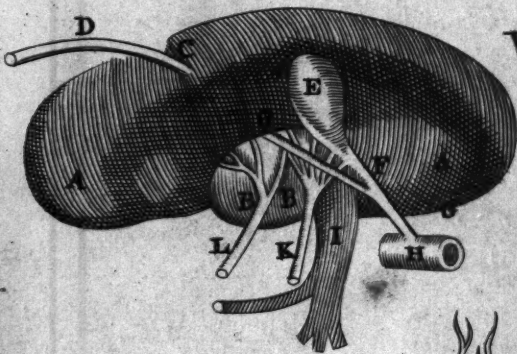
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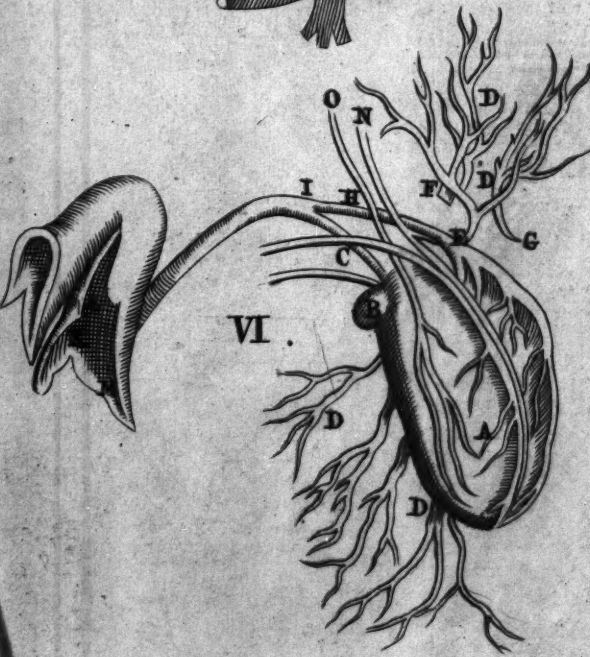
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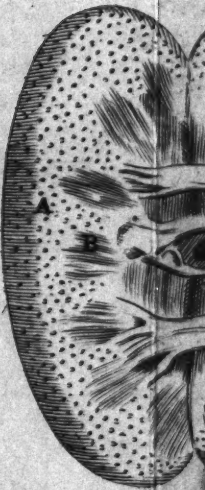
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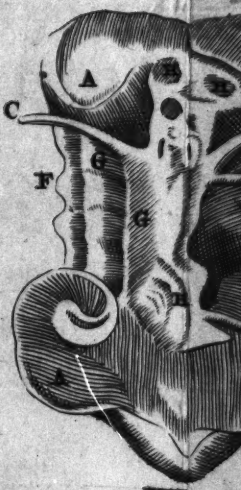
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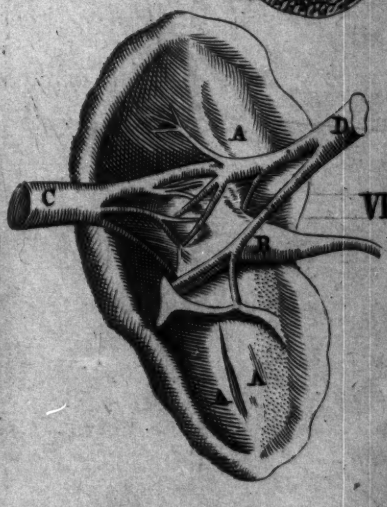
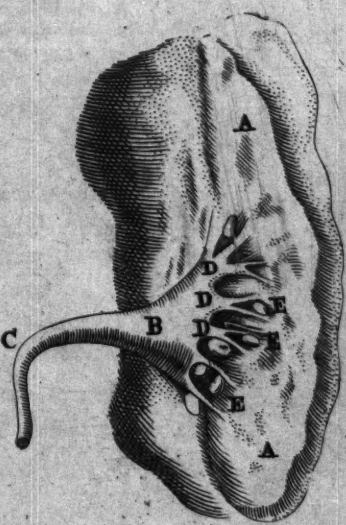
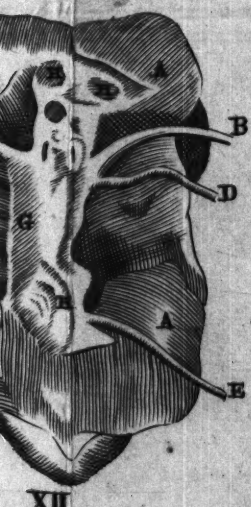
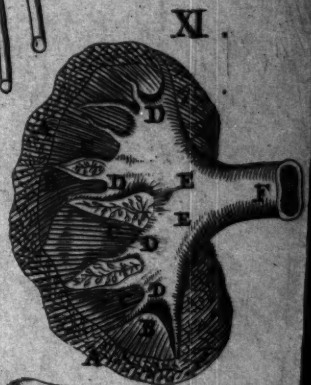
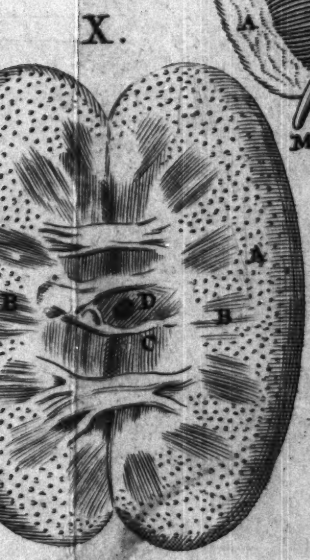
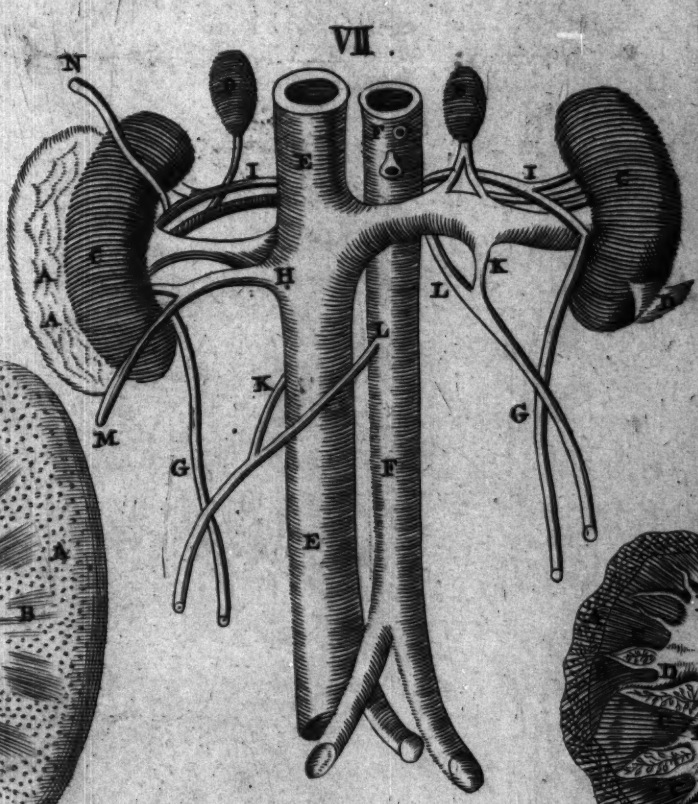
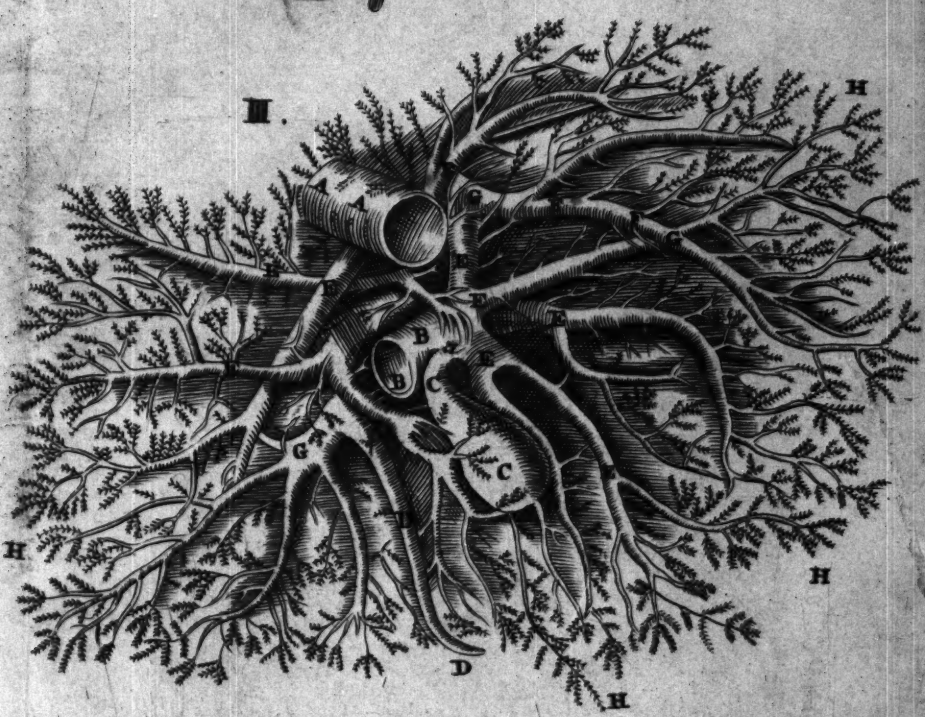
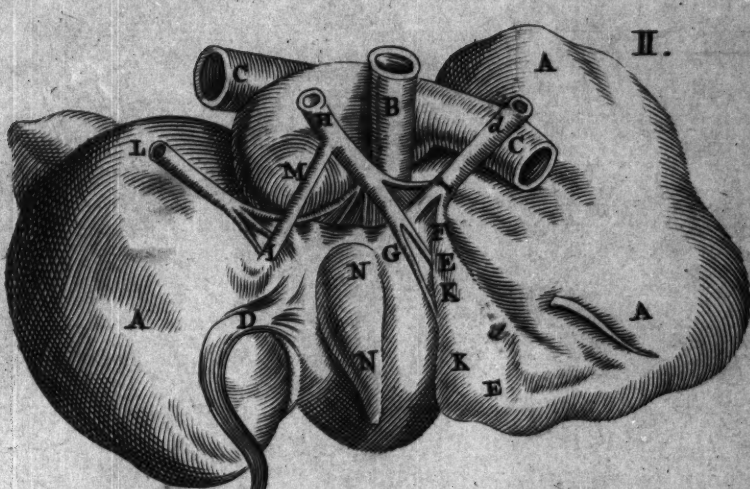


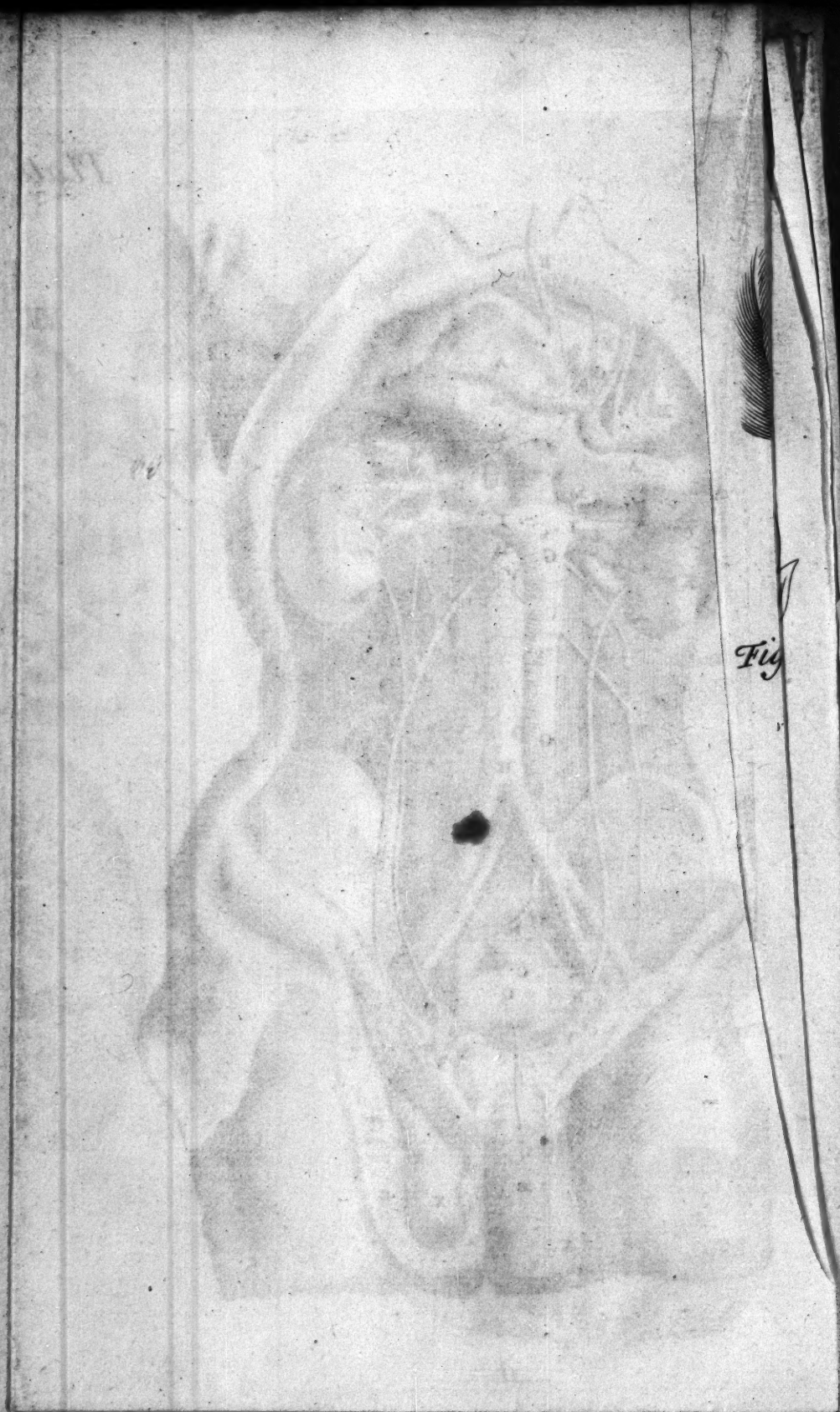
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XII.







Fig

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Fig. I. **S**hews the urinary Vessels, and those which serve to Generation in Men.

- A. A. A. The under concave Part of the Liver.
- B. The Gall-Bladder.
- C. The *Ductus Biliaris* turn'd upwards.
- D. The *Vena Cystica*.
- E. The Artery distributed to the Liver and Bladder.
- F. The Umbilical Vein turn'd upwards.
- G. G. The descending Trunk of the *Vena Cava*.
- H. H. The descending Trunk of the *Aorta*.
- I. I. The Emulgent Veins.
- K. K. The Kidneys.
- L. L. The Emulgent Arteries.
- M. M. The *Glandulæ renales* with their Vessels from the Emulgents.
- N. N. The Ureters going from the Kidnies to the Bladder.
- O. The Bottom of the Bladder.
- P. P. The Insertion of the Ureters in the Sides thereof.
- Q. Q. A Portion of the *Urachus* hanging down.
- R. A Portion of the *Rectum* cut off.
- S. S. The *Venæ Præparantes*, of which the Right proceeds from the Trunk of the *Cava*, the Left from the *Emulgent*.
- T. The *Corpus Pyramidale* arising from the Union of the *Vasa Præparantia*.
- V. The Origin of the *Arteriæ Præparantes* out of the Trunk of the *Aorta*.
- X. X. The *Testes*, of which the Left is divested of its common Integument.
- Y. Y. The *Vasa Deferentia* ascending from the *Testes* to the *Abdomen*.
- Z. The *Penis*.
- a. a. The *Scrotum* which inclosed the Left Testicle.
- b. b. The *Ossa Iliæ*.
- c. c. The *Ossa Pubis*.
- d. d. The Loins.

Fig. II. Is a View of the Liver taken out of the Body, and the Vessels belonging thereto.

- A. A. A. The under sinuous Part of the Liver.
- B. The *Vena Portæ* going out of it.
- C. C. Two Trunks of the *Vena Cava* by the gibbous Part of the Liver.
- D. The Umbilical Vein arising out of the Liver.
- E. E. The Gall-Bladder.
- F. The *Ductus Biliaris*, or *Cystic Duct*.
- G. The other, call'd the *Hepatic Duct*.
- H. An Artery from the *Ramus Cæliacus*.
- I. A Branch thereof entering the Liver.
- K. Another Branch of the same going to the Gall-Bladder.
- L. A Nerve from the sixth Pair.
- M. A small Lobe arising into the Caul, by means whereof the Liver, when full of Water, sometimes is evacuated.
- N. N. The Protuberances, which were formerly call'd the *Portæ*, whence the Vein B was call'd *Vena Portæ*.
- a. The Part of the *Vesica Felleis* prominent above the Liver.
- d. The *Ductus Communis*, or *Choledochus*, form'd by the Meeting of the *Cystic Duct* F, and the *Hepatic G*.

Fig. III. Exhibits a View of the Liver freed from its Parenchymous Substance, that the Ramifications, Anastomoses, &c. of the Vessels may appear.

- A. A. A Portion of the *Vena Cava*.
- B. B. The Beginning of the Trunk of the *Vena Portæ*.
- C. C. The Gall-Bladder.
- D. D. The Umbilical Vein ending in a Branch of the *Vena Portæ*.
- E. E, &c. Branches of the *Vena Portæ* dispersed through the Parenchymous Substance in very numerous and minute Ramifications.

F. F, &c.

F. F. &c. Branches of the *Vena Cava* spent chiefly upon the upper Parts of the Liver, and in various Places joining those of the *Portæ*.

G. G. &c. The more notable Anastomoses of the Branches of the *Vena Cava* and *Portæ*.

H. H. &c. The Capillary Extremities of the said Veins.

a. The *Ductus Cysticus*.

Fig. IV. Shews the upper gibbous Part of the Liver.

A. A. The convex or gibbous Superficies of the Liver.

B. The Membrane of the Liver separated.

C. C. The *Ligamentum Septale*.

D, D. The Egress of the Branches of the *Vena Cava*, from the upper Part of the Liver.

Fig. V. Is a View of the concave Part of the Liver, and Vessels thence proceeding.

A, A, The sinuous or concave Part of the Liver turn'd upwards.

B. B. The Lobe to which the *Omentum* is joined.

C. The Fissure, out of which

D. The Umbilical Vein descends,

E. The Gall-Bladder,

F. The *Ductus Cysticus*.

G. G, The *Ductus Hepaticus* ending in

H, A Part of the *Duodenum*.

I. The Trunk of the *Vena Portæ* descending from the Liver.

K. The Right *Celiac* Artery,

L. A Nerve from the 6th Pair.

Fig. VI. Is a Representation of the Gall-Bladder apart from the Liver, with its Vessels.

A. The Bottom of the Gall-Bladder,

B. A kind of *Sinus* at the Neck of the Bladder ; or, according to others, a *fibrous Ring*, which by some have been imposed, who thought there were Valves placed here to hinder the Return of the *Choler*.

C, The Neck of the Bladder, or *Ductus Cysticus*.

D. D. The original Sources of the *Ductus Cysticus* among the Branches of the *Vena Portæ* and *Cava*.

E. The Concourse of the Ducts.

F. A Branch of the *Vena Portæ*.

G. A Branch of the *Vena Cava*.

H. The *Porus Biliaris*, or *Hepatic Duct*.

I. The Beginning of the *Ductus communis* of the *Cystic* and *Hepatic Duct*.

K. The Orifice thereof in the *Duodenum*.

L. M. The *Duodenum* slit to shew the same.

N. An Artery dispersed through the Liver.

O. A small Nerve sent to the Liver and Gall-Bladder. *Engrav'd too big.*

Fig. VII. Exhibits a View of the Kidnies, Emulgent Vessels, &c.

A. A. The common Membrane of the Kidnies separated.

B. B. The *Renes Succenturiati*.

C. C. The Kidnies.

D. A Part of the proper Membrane separated.

E. E. The descending Trunk of the *Vena Cava*.

F. F. The descending Trunk of the *Aorta*.

G. G. The *Ureters*.

H. H. The Emulgent Veins.

I. I. The Emulgent Arteries.

K. K. The Spermatic Veins.

L. L. The Spermatic Arteries.

M. The *Vena Adiposa* from the Emulgent.

N. The *Arteria Adiposa*.

Fig. VIII. Shews the Ingress of the Emulgent Vessels on the hollow Side of the Kidnies.

A. A. A. The Inside of the Kidney slit lengthways.

B. The *Pelvis* or *Basin* of the *Ureter*.

C. The Emulgent Vein diffused in various Branches thro' the Kidney.

D. The Emulgent Artery, which, by various Branches thro' the Kidney, inosculates with the Capillaries of the Vein.

Fig. IX.

Fig. IX. Shews the Rise of the *Ureters* in the Kidnies.

A. A. The Kidney dissected.

B. The *Pelvis* or Bason.

C. The *Ureter* hanging down.

D. D. D. Small Tubes of the *Pelvis* or *Ureter*, embracing

E. E. E. The Papillary Caruncles, into which the *Serum* issues through the urinary *Tubuli*, and from whence, by very small Perforations, it ouzes into the Tubes of the *Pelvis* to be carried off by the *Ureter* to the Bladder.

Fig. X. Represents a Kidney cut longitudinally from the Back to the *Pelvis*.

A. A. The glandulous Part of the Kidney.

B. B. The *Tubuli*, which bring the Urine into

C. C. The *Pelvis*, where it enters

D. The Mouth of the *Ureter*.

Fig. XI. Another View of the internal Structure of the Kidnies.

A. A. The glandulous Substance of the Kidney.

B. B. The *Urinary Tubuli*.

C. C. The internal Texture of the *Glandulæ papillares*, like leafy Twigs.

D. D, &c. The Tubes of the *Pelvis*.

E. E. The *Pelvis*.

F. The Beginning of the *Ureter*.

Fig. XII. Shews the Kidney cut lengthways thro' the *Ureter* to the *Pelvis*.

A. A. A. The Kidney so dissected.

B. Half the *Ureter* bent to the Right Hand.

C. The other Half bent to the Left.

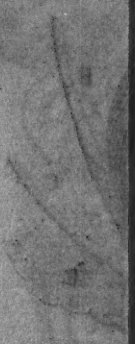
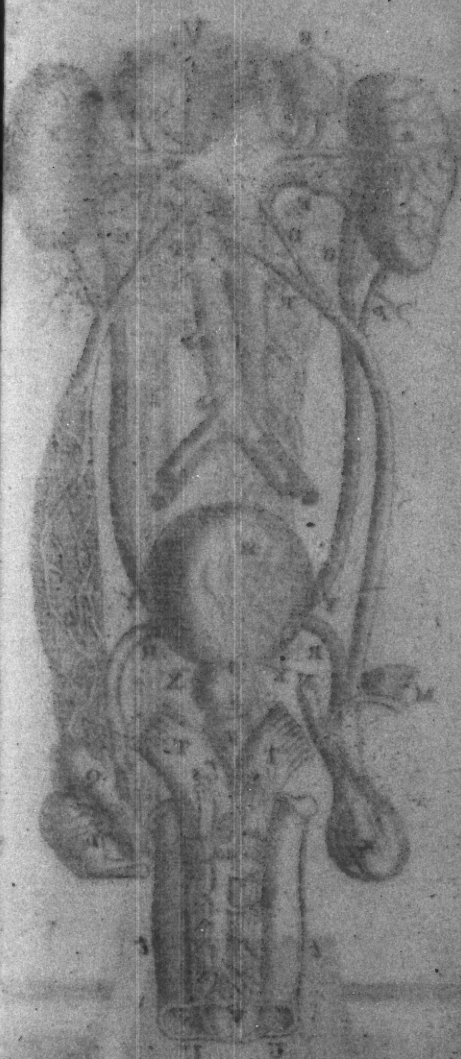
D. A Branch of the Emulgent Vein.

E. A Branch of the Emulgent Artery.

F. The Extremity and

G. G. The whole internal Cavity of the *Pelvis* opened.

H. H. H. The *Papillæ*, thro' which the Urine issues into the Tubes of the *Pelvis*.



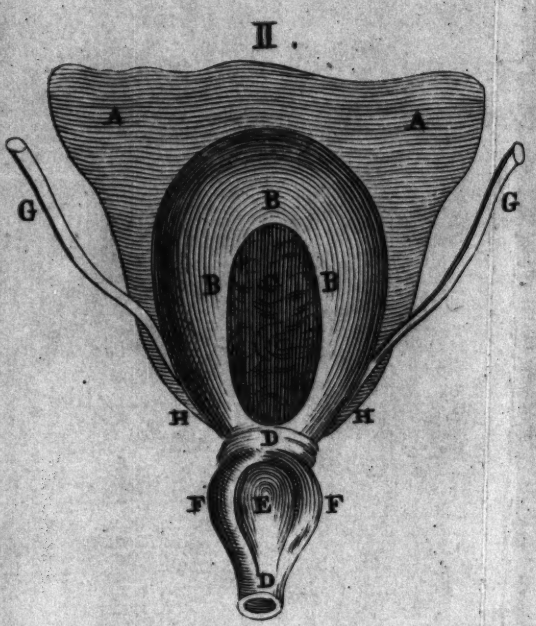
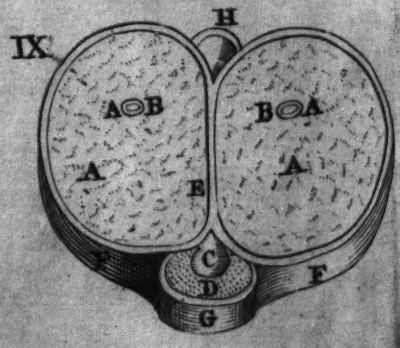
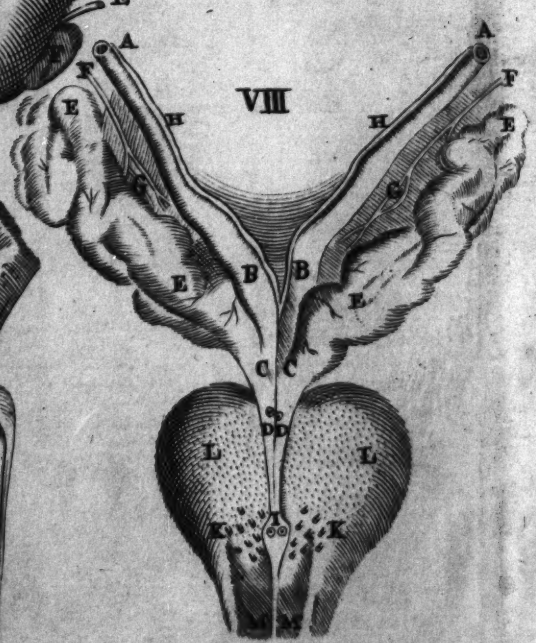
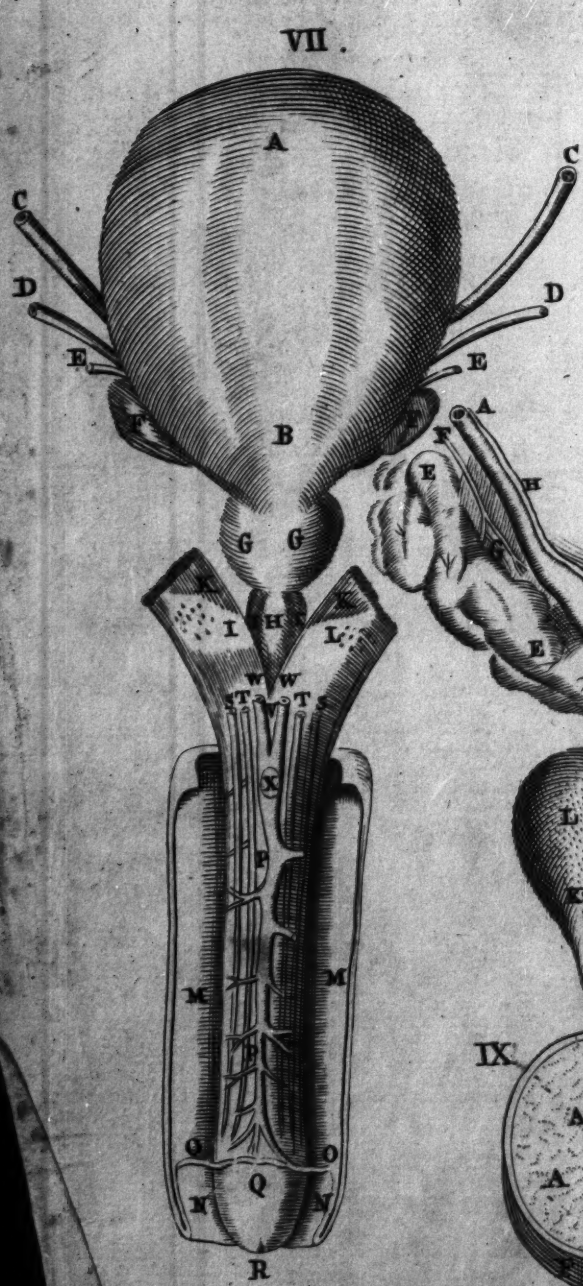
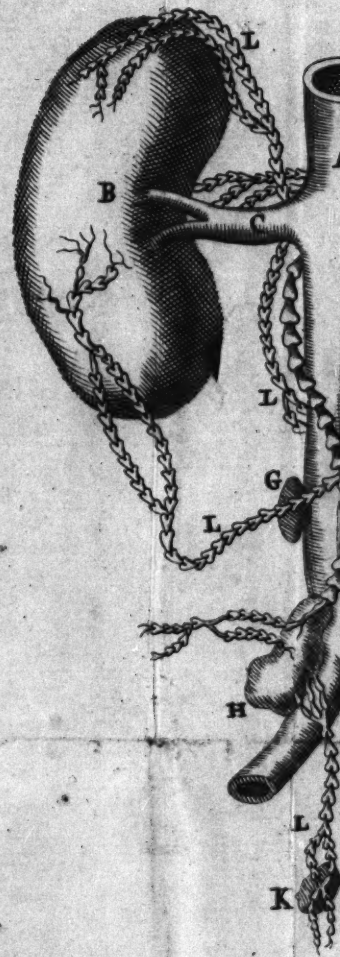
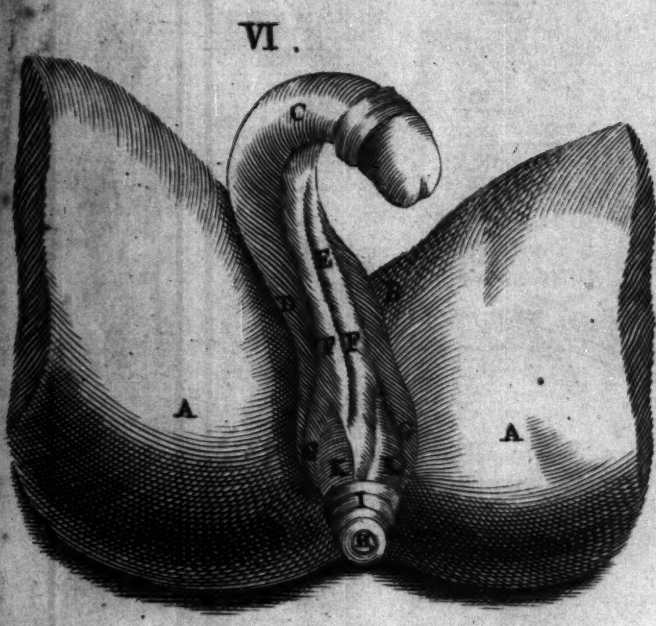
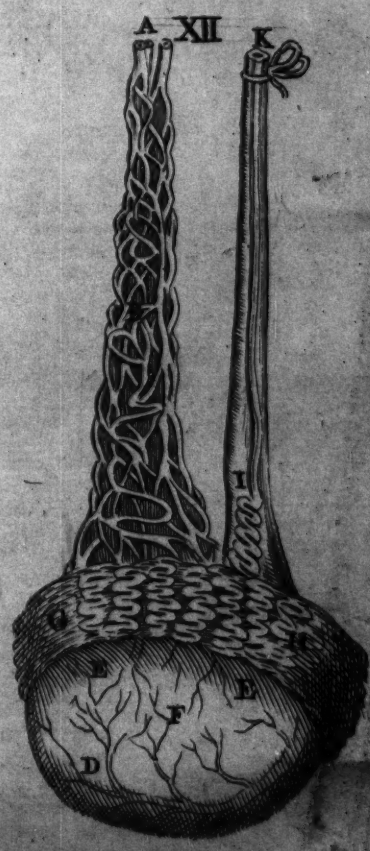
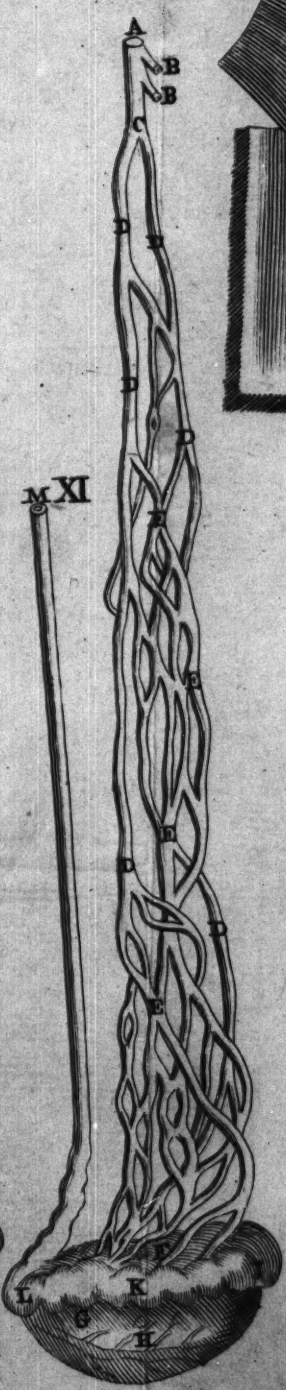
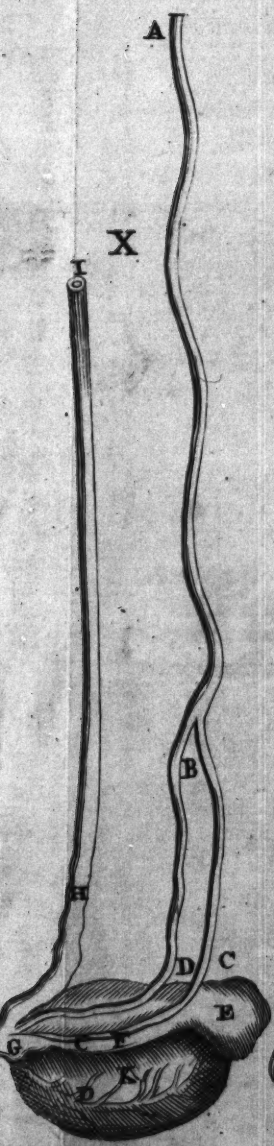
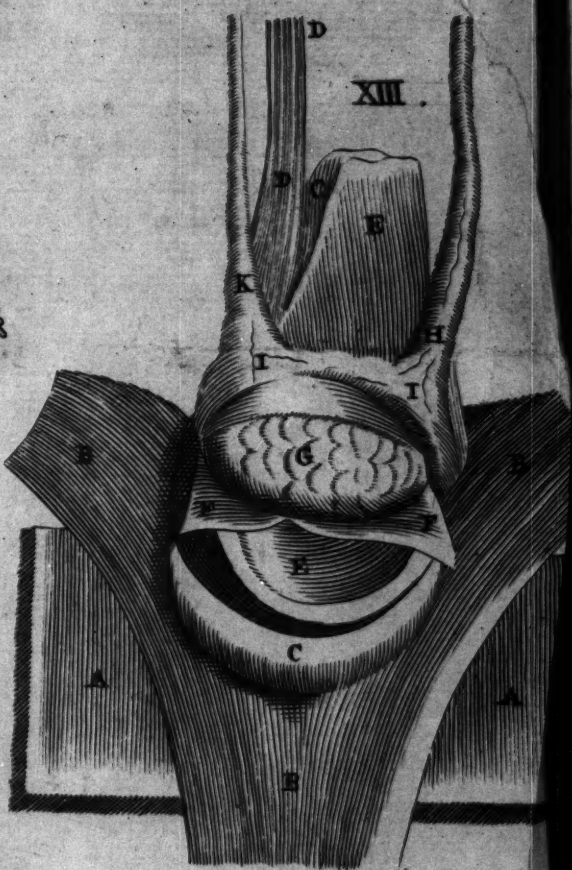
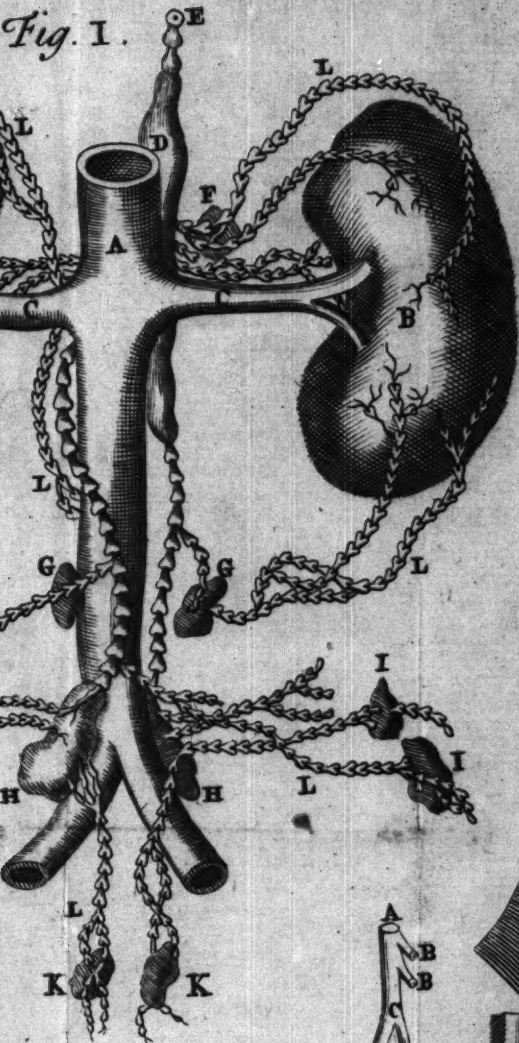
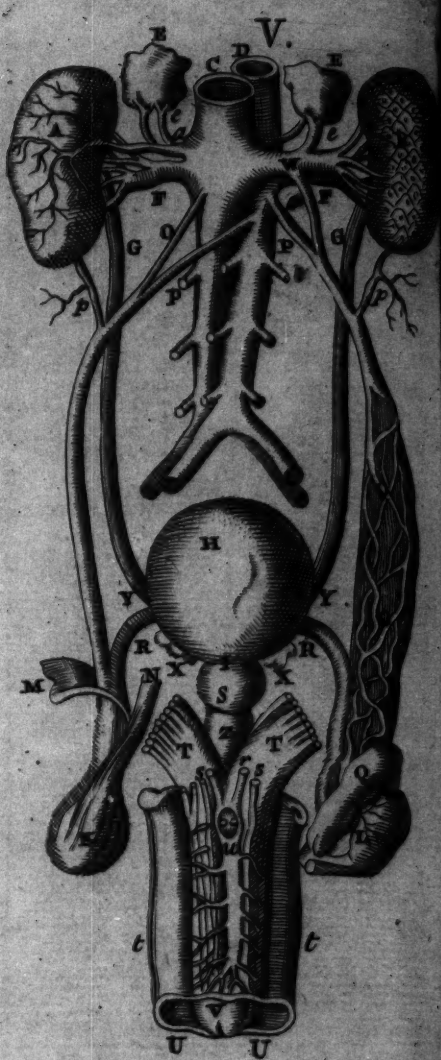
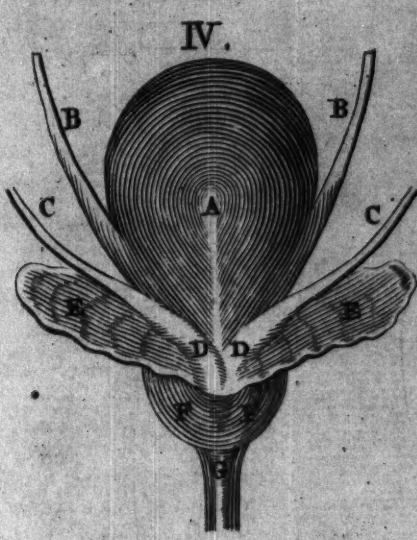
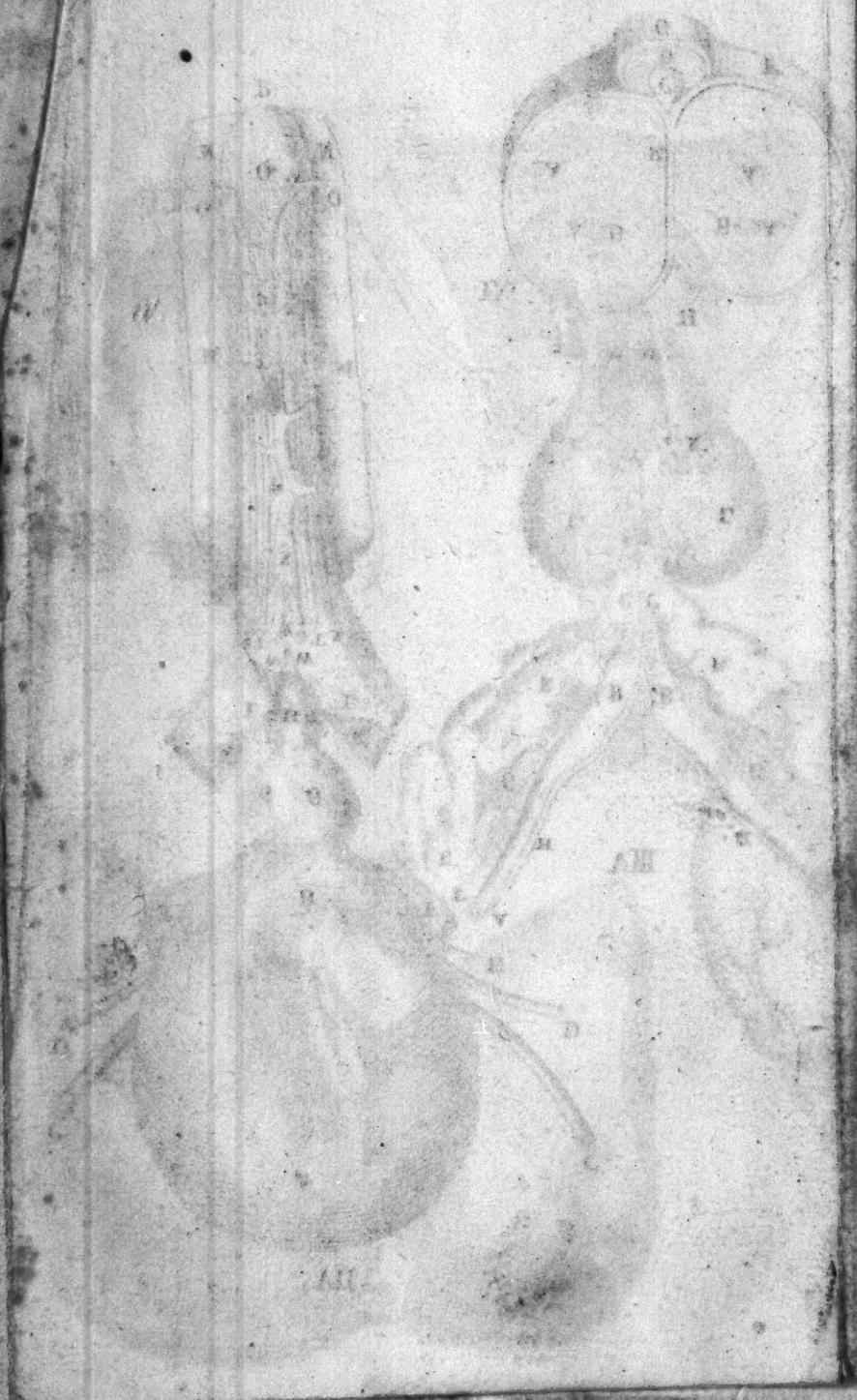


Fig. I.







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Fig. I. **I**S a View of the *Vasa Lymphatica*, their Structure, Course, &c.

A. The Trunk of the *Aorta*.

B. B. The Kidnies.

C. C. The Emulgent Arteries.

D. The *Receptaculum Chyli*.

E. The *Ductus Thoracicus* cut off.

FGHIK. Several Glands, with which

L. L. &c. The *Vasa Lymphatica* communicate, and afterwards discharge their Contents into the Receptacle of the *Chyle*.

Note, The *Lymphatics* in the Upper-part of this Figure proceed from the Kidnies, those in the Lower-part from other Parts of the Body; there being no Parts of animal Bodies but what send out some *Lymphatics*, except the *Brain*, where none have yet been observ'd.

Fig. II. Shews the Coats and Parts of the Bladder.

A. A. The common Coat of the Bladder.

B. B. B. Its middle Coat of muscular Fibres.

C. Its inner wrinkly Coat.

D. D. The Neck of the Bladder.

E. The *Sphincter* Muscle thereof.

F. F. The *Glandulæ prostaticæ*.

G. G. The *Ureters*.

H. H. Their Insertion between the two proper Coats of the Bladder.

Fig. III. Shews the Bladder and Seminal Glands dissected, with the *Vesiculæ Seminales*, &c.

A. The inner Coat of the Bladder laid open.

B. B. The *Ureters*.

C. C. The Orifices of the *Ureters* opening obliquely into the Bladder.

D. D. The *Vasa Deferentia* going to their Insertions.

E. E. The *Vesiculæ Seminales* expanded.

F. F. The *Glandulæ prostaticæ* divided.

G. The

G. The *Foramen*, which leads from the *Vesiculæ* into the Beginning of the *Urethra*, at which there is placed a Valve.

H. The Passage at the Beginning of the *Urethra* & common to the *Semen* and *Urine*.

Fig. IV. Is a View of the Situation, Insertions, &c. of the *Ureters* and Seminal Vessels on the posterior Part of the Bladder.

A. The Hinder-part of the Bladder.

B. B. The *Ureters*.

C. C. A Portion of the *Vasa Deferentia*.

D. D. Are what *Bartholin* calls the *Capsulæ Seminales*.

E. E. The *Vesiculæ Seminales*.

F. F. The *Glandulæ prostaticæ*.

G. The *Urethra*.

Fig. V. Is a View of the *Vasa Seminalia*, and Genital Parts in Men.

A. A Kidney divested of its Membranes, to shew the Ramifications of the Blood-Vessels on its Superficies.

B. The other Kidney.

C. The Trunk of the *Vena Cava*.

D. The Trunk of the *Aorta*.

E. E. The Renal Glands, with their Vessels &c.

F. F. The Emulgent Vessels.

G. G. The *Ureters*.

H. The Bladder.

I. The Neck thereof.

K. A Testicle divested of the *Scrotum* hanging down.

L. The other Testicle divested of its common Tunics, to shew the Branching of Vessels and *Epididymis*.

M. The Process of the *Peritonæum* (in which the *Vasa Præparantia* go inclosed to the Testicle) cut off.

N. The *Cremaster* Muscle cut off.

O. O. The *Venæ Præparantes*, improperly thus called.

P. P. The

P. P. The *Arteriæ Preparantes*.

Q. The *Epididymis* or *Parastata*.

R. R. The *Vasa Deferentia*, or carrying the Seed to the *Vesiculæ Seminales*.

S. The *Corpus Glandosum*.

T. T. The two nervous Bodies which compose the *Penis*, which appear when the Skin of the *Penis* is drawn aside.

U. U. The *Præputium* drawn aside.

V. The Glans of the *Penis*.

W. The extraordinary Insertion of the Left Spermatic Vein *o* into the Emulgent, and not into the Trunk of the *Cava*, as on the other Side; left passing over the *Aorta*, the returning Stream of seminal Blood should be annoy'd or interrupted by its continual Pulsations.

X. X. The *Vesiculæ Seminales*.

Y. Y. The Insertion of the *Ureters*.

Z. The Beginning of the *Urethra*.

r. r. The Veins which unite into one Trunk, and run on the Back of the Yard.

s. s. The *Arteries*, with Nerves on each Side.

u. The Veins open'd to shew the *Valves*.

Fig. VI. Shews the Muscles of the *Penis in situ*.

A. A. The *Nates* or Buttocks.

B. The Region of the *Pubes*.

C. The *Penis* divested of the Skin.

D. D. The *Corpora Cavernosa*, or nervous Bodies.

E. The *Urethra*.

F. F. The two Muscles which dilate the *Urethra*.

G. G. Other two which erect the *Penis*.

H. The *Anus*.

I. I. The *Sphincter Ani*.

K. K. Two Muscles which draw the *Rectum* upwards.

Fig. VII. Shews the Bladder, Seminal Glands, the *Penis* and its Vessels.

A. The Upper-part or Fund of the Bladder.

Y

B. Its

- B. Its Neck.
 C. C. Portions of the *Ureters*.
 D. D. Portions of the *Vasa Deferentia*.
 E. E. Vessels running to the *Vesiculæ Seminales*.
 F. F. The *Vesiculæ Seminales*, or Seed-Bladders.
 G. G. The Fore-part of the *Prostatae*, or *Corpus Glan-*
dosum.
 H. The *Urethra*.
 I. I. The spongy Part thereof.
 K. K. The *Erectores Penis*.
 L. L. The Beginning of the nervous Bodies of the
Penis separated from the *Ossa Pubis*.
 M. M. The Skin of the *Penis* drawn aside.
 N. N. The Duplication of the Skin forming the *Præ-*
putium.
 O. O. The Skin that was fasten'd behind the *Glans*.
 P. P. The Back of the *Penis*.
 Q. The *Glans*.
 R. The Perforation therein thro' which the Urine
 issues forth.
 S. S. The Nerves which run along the Back of the *Penis*.
 T. T. The Arteries in like manner.
 V. The Conjunction of the nervous Bodies.
 W. W. The two Veins which unite and form one consi-
 derable Branch which runs along on the Back
 of the *Penis*.
 X. A Hole cut in the said Vein shewing the *Valves*
 therein, as at *u* in the last Figure but one.
 Fig. VIII. Is a View of the *Vasa Deferentia*, *Vesiculæ Semi-*
nales, and *Prostatae*.
 A. A. The Parts of the *Vasa Deferentia* which appear
 thick, yet have but a small Cavity.
 B. B. The Parts thereof which have a larger Cavity
 and thinner Substance.
 C. C. The Extremities of the same Vessels again be-
 coming narrower, and communicating, by a
 small Hole, with
 D. D. The

D. D. The Neck of the Seed-Bladders, and which are parted by a thin Membrane, so that the Seed may be supplied on one Side, tho' obstructed on the other.

E. E. The *Vesiculæ Seminales* or Seed-Bladders blown up, that their wonderful Widenings and Constrictations may appear.

F. F. Vessels going to the Seed-Bladders.

G. G. The Membranes which keep the *Vesiculæ* and *Vasa Deferentia* in their Places.

H. H. Blood-Vessels on the Sides of the *Vasa Deferentia*.

I. A Caruncle call'd *Caput Gallinuginis*, or Woodcock's Head; thro' two small Holes in which (as thro' the Eyes) the Seed is darted into the *Urethra in Coitu*.

K. K. The Ducts of the *Prostatæ* opening into the *Urethra*, by the Sides of the Caruncle.

L. L. The *Prostatæ* or *Corpus Glandosum* divided.

M. M. The *Urethra* opened.

Fig. IX. Is a transverse Section of the *Penis*.

A. A. The spongy or cavernous Substance of the nervous Bodies of the *Penis* on each Side.

B. B. The Sections of the two Arteries which march through the nervous Bodies.

C. The urinary Passage of the *Urethra*.

D. The spongy Substance of the *Urethra*.

E. The *Septum* between the nervous Bodies.

F. F. A strong Membrane enclosing the nervous Bodies.

G. A thin Membrane about the *Urethra*.

H. A Vein creeping along the Back of the *Penis*.

Fig. X. } Are Views of the *Vasa Præparantia*, *Testes*, *Epididymis*, *Vasa Deferentia*, &c.
XI. XII. }

A. The Artery preparing Seed, descending from the Trunk of the *Aorta* to the Testicle.

B. Its Division into two Branches.

C. C. The Lesser Branch which runs to the *Epididymis*.

D. D. The Greater Branch which is spent on the Substance of the Testicles.

E. The Greater End of the *Epididymis* connected to the Upper-part of the Testicle.

F. The Middle-part of the *Epididymis* turn'd up, that the Ramifications of the Artery on the Belly of the Testicle may appear.

G. The Smaller End of the *Epididymis*.

H. The Beginning of the *Vas deferens*.

I. The *Vas deferens* cut off.

K. The Body of the Testicle so placed that its Vessels may best be seen.

Fig. XI. A. The Vein improperly said to *prepare Seed*, whereas it only returns the Blood, after the seminal Secretion, from the Testicles to the *Vena Cava*.

B. B. The Branches of the said Vein coming from the *Omentum* and *Peritonæum*.

C. The first Division into two Branches, or, more properly, the Union of the two Branches, which are composed of the Union of divers other lesser ones below them, which are wonderfully ramified and united.

D.D.D.D. Denote the Places where are the *Valves* of the *Vena Præparans*, and which occasion the Veins, when blown up, to appear knotty in these Parts.

E.E.E.E. The numerous Unions and Coalefcencies of the lesser Branches of the *Venæ Præparantes*.

F. The Upper-part of the Testicle, into which the Ramifications of the *Venæ Præparantes* are implanted.

G.G. The Ramifications of the said Veins creeping along the Sides of the Testicles through their *Tunica Albuginea*, or White Coat.

H. The Body of the Testicle.

I. The Greater End,

K. The Middle, and

L. The Lesser End

} of the *Epididymis*.

M. The

Fig.

Fig.

M. The *Vas deferens* cut off near the Middle.

Fig. XII. A. The *Vasa Præparantia* cut off in a Dog.

B. The Part of the *Vasa Præparantia*, which is, from its Form, call'd *Corpus Pyramidale*, and is form'd of the promiscuous Intercourse and Circumvolutions of the numerous Branches of the said Vessels.

C. The Ramifications tending to the *Epididymis*.

D. The greatest Branch of the *Arteria Præparans* running along the Belly of the Testicle.

E. E. The Ramifications of the *Venæ Præparantes*.

F. A Dog's Testicle swell'd with Seed.

G. The greater End } of the *Epididymis* turgid with

H. The lesser End } Seed.

I. The Beginning of the *Vas deferens*, carrying the Seed thro' its winding Vessels to the *Vesiculæ Seminales*.

K. The *Vas deferens* of a Dog tied before Coition, the *Vasa Præparantes* being unhurt, that the seminal Vessels, being distended with Seed, may be seen more apparently.

Fig. XIII. Shews the Tunics, Substance, and Vessels of the Testicles.

A. A. The Skin of the *Scrotum* separated.

B. B. B. The carnos Membrane call'd *Dartos*.

C. C. The first Coat of the Testicles, call'd *Elythroïdes*.

D. D. The *Cremaster* Muscle.

E. E. The second Coat, call'd *Erythroïdes*.

F. F. The third or inmost Coat, call'd *Albuginea*.

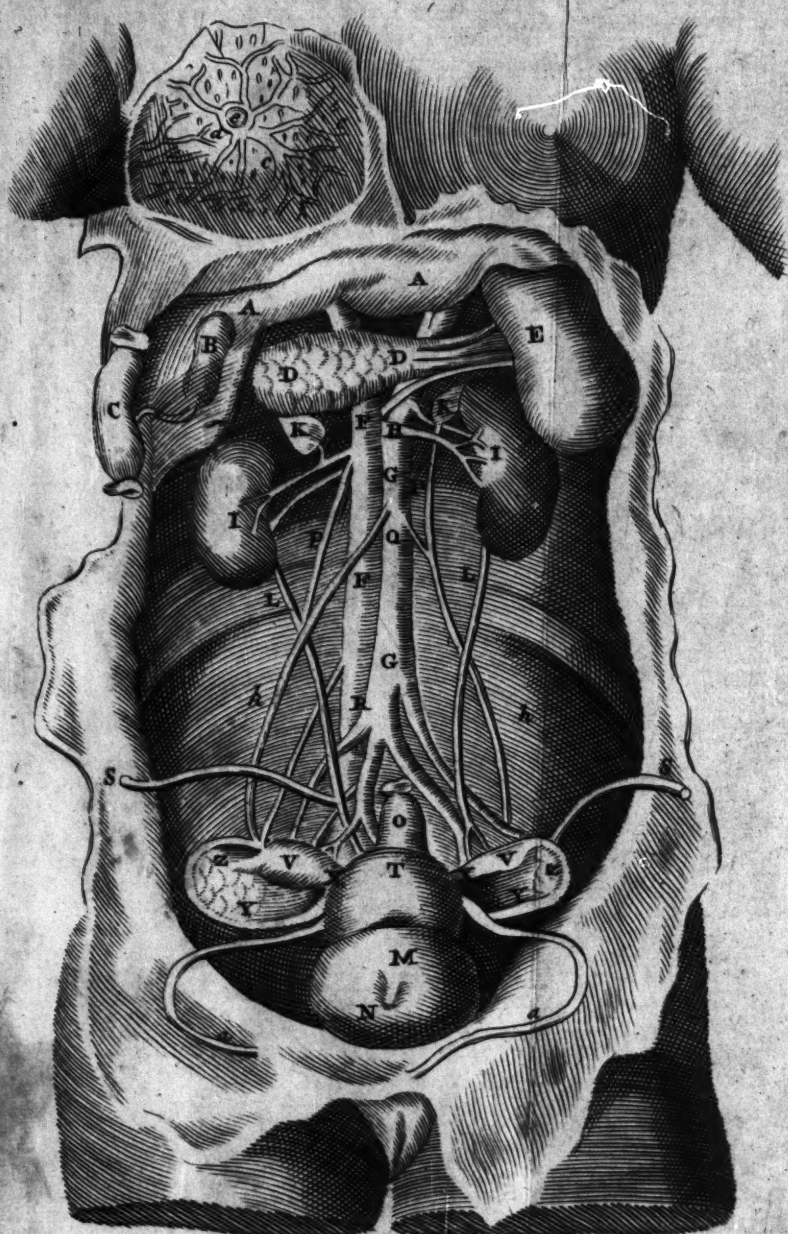
G. The glandulous Substance of the Testicle.

H. The *Vas* or *Corpus Pyramidale*.

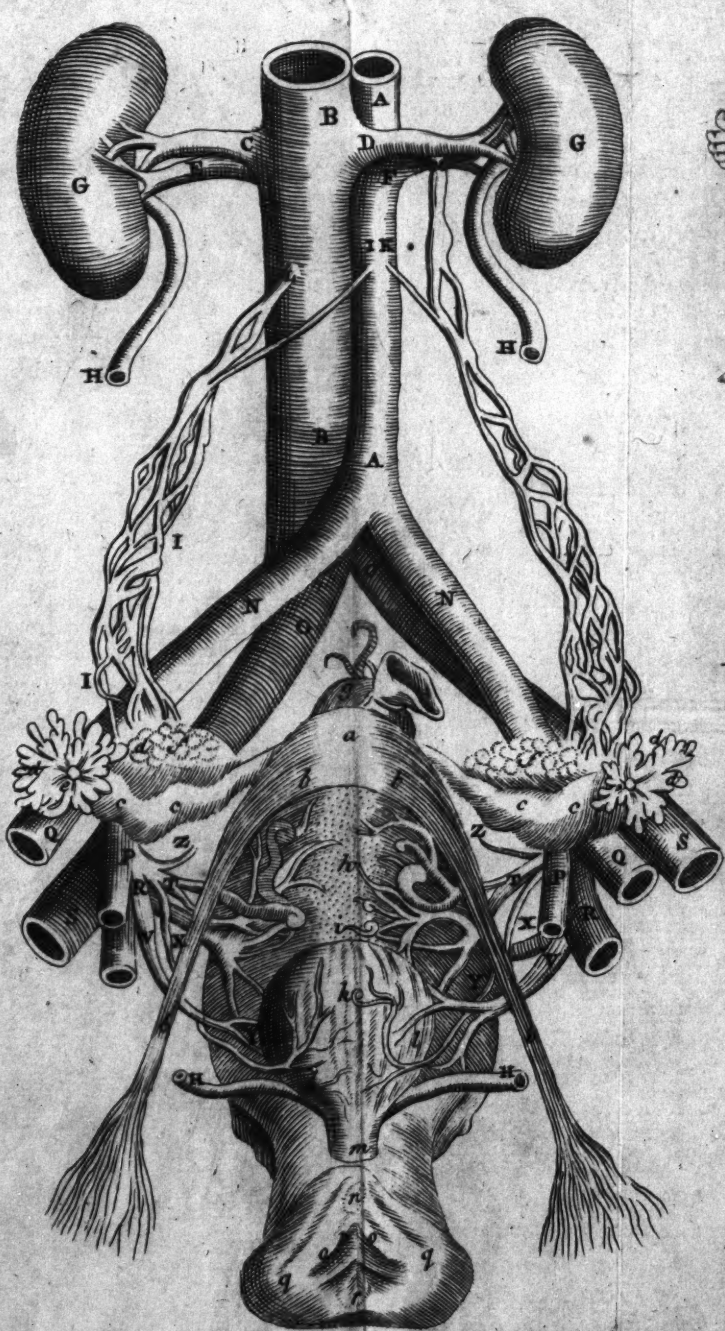
I. I. The *Epididymis*.

K. The *Parastates*, or *Corpora variciformia*, being no other than the Continuation of the *Epididymis* to the *Vas deferens*.

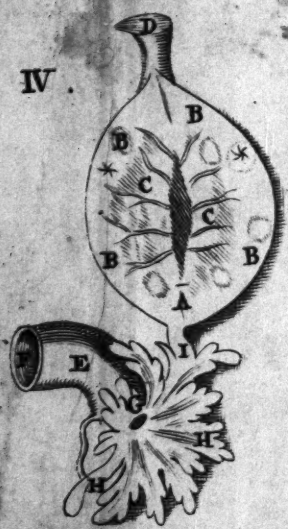
Fig. I.



II.



IV.



III.

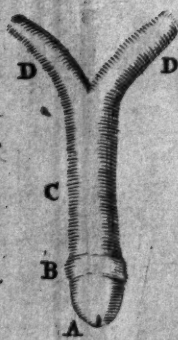
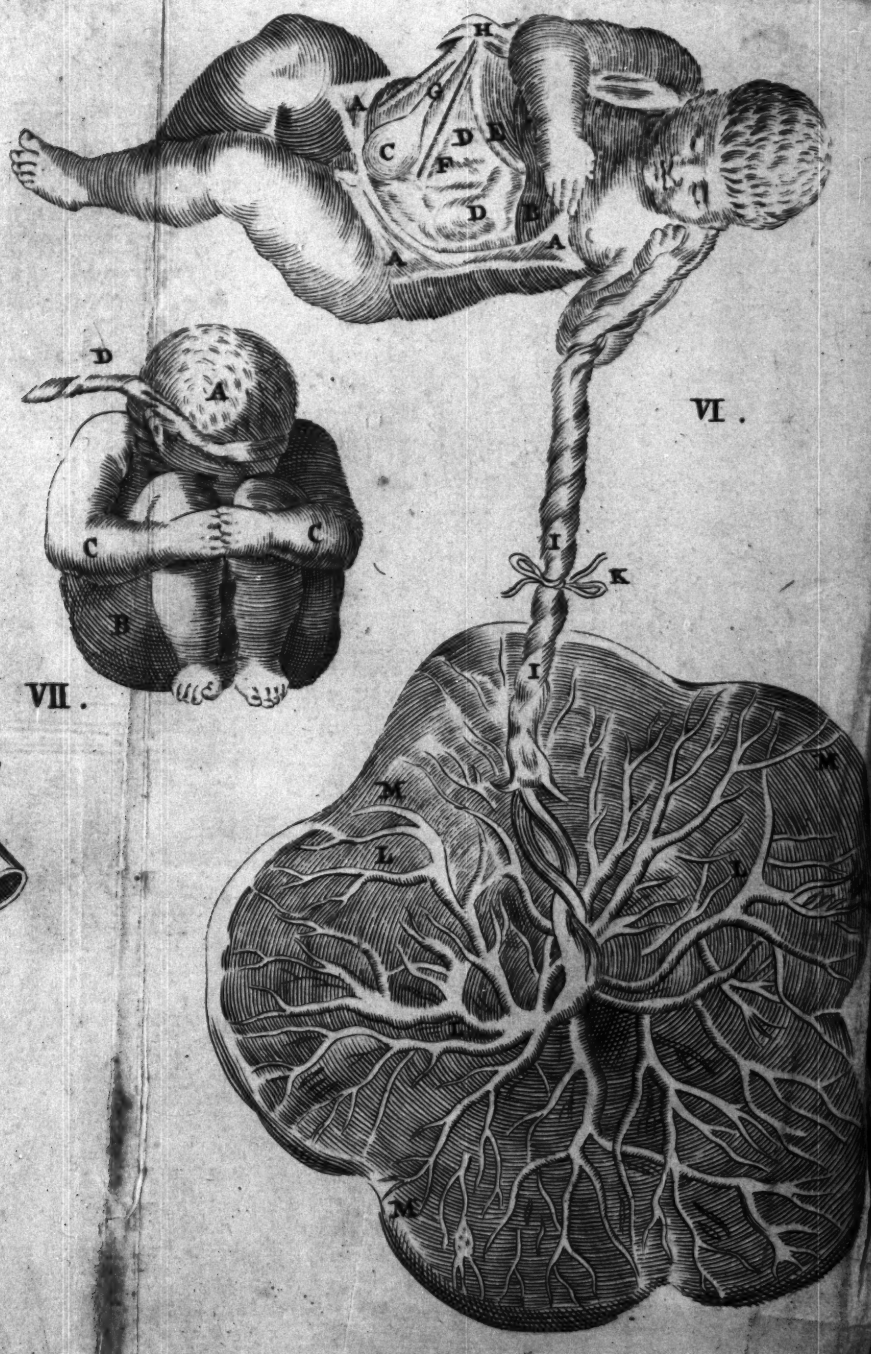


Fig
A
D
C
H

V.



VI.



VII.





Fig. I. **R**epresents the Parts serving to Generation in Women in their natural Situation; and the internal Structure of the Breast.

- A. A. The Liver in its natural Site.
- B. The Gall-Bladder joined to
- C. A Portion of the *Duodenum* by the Bile-Duct.
- D. D. The *Pancreas*, or Sweet-bread.
- E. The Spleen.
- F. F. The descending Trunk of the *Vena Cava*.
- G. G. The descending Trunk of the *Aorta*.
- H. H. The Emulgent Veins and Arteries.
- I. I. The Kidnies.
- K. K. The *Renal* Glands.
- L. L. The *Ureters* going to the Bladder.
- M. The Bottom of the Bladder.
- N. The Insertion of the *Urachus* therein.
- O. Part of the *Intestinum Rectum*.
- P. P. The *Venæ Præparantes*.
- Q. The Rise of the *Arteriæ Præparantes* out of the Trunk of the *Aorta*.
- R. The Place where the Trunks of the *Aorta* and *Cava* begin to divide into the *Iliac* Branches.
- S. S. Portions of the Umbilical Arteries.
- T. The Bottom of the Womb.
- V. V. The *Testes Muliebres*.
- X. X. The Parts by which the *Testes* communicate with the Womb.
- Z. Z. The *Tubæ Fallopianæ*.
- Y. Y. The two superior Ligaments of the Womb.
- a. a. The two inferior ones.
- b. b. The concave Parts of the *Iliæ*, larger in Women than in Men.

In the Breast.

- c. c. c. The Vessels dispersed thro' its Superficies.
- d. The greatest and middlemost of the Glands.
- e. The *Papilla*, or Teat.

Fig. II. Is

Fig. II. Is a View of the genital Parts of a Woman taken out of the Body and placed in their natural Situation.

- A. A. The Trunk of the *Aorta*.
- B. B. The Trunk of the *Vena Cava*.
- C. D. The Right and Left Emulgent Veins.
- E. F. The Right and Left Emulgent Arteries.
- G. G. The Kidnies.
- H. H. The *Ureters* at their Rise and Insertion.
- I. I. I. The Right Spermatic Artery.
- K. K. The Left ditto.
- L. L. The Right Spermatic Vein.
- M. M. The Left ditto.
- N. N. The *Iliac* Arteries.
- O. O. The *Iliac* Veins.
- P. P. Inner Branches of the *Iliac* Artery.
- Q. Q. The outer ditto.
- R. R. The inner Branches of the *Iliac* Vein.
- S. S. The outer ditto.
- T. T. The *Hypogastric* Arteries going to the Womb and *Vagina*.
- U. U. The Veins attending the said Arteries.
- X. X. The Branches of the *Hypogastric* Artery tending to the Bladder.
- Y. Y. The correspondent Veins of the same Kind.
- Z. Z. Portions of the Umbilical Arteries.
 - a. The Fund of the Womb cloathed with its proper Coat.
 - b. b. The *Ligamenta Rotunda*.
 - c. c. The *Tubæ Fallopianæ* in their natural Site.
 - d. d. The fimbriated Extremities of the *Tubæ*.
 - e. e. The *Foramina* of the *Tubæ*.
 - f. f. The Testicles in their natural Site.
 - g. A Portion of the Streight Gut.
 - b. The Neck of the Womb divested of its proper Coat, that the Vessels may be the better seen.

i. The

- i. The Fore-part of the *Vagina* freed from
- k. The Bladder, for that Reason contracted.
- l. l. The Blood Vessels running thro' the Bladder.
- m. The Sphincter Muscle of the Bladder.
- n. The *Clitoris*.
- o. o. The *Nymphæ*.
- p. The *Meatus Urinarius*.
- q. q. The *Labia Pudendi*.
- r. The Orifice of the *Vagina*.

Fig. III. Is a View of the *Clitoris* taken out of the Body.

- A. The *Glans* of the *Clitoris*.
- B. The *Præputium* thereof.
- C. The Body of the *Clitoris*.
- D. D. The Roots or *Crura* of the nervous Bodies cut off from the Tubercle of the *Ischium*.

Fig. IV. Exhibits a Woman's Testicle or *Ovarium*, with the End of the *Tuba Fallopiana* annexed to it.

- A. The Testicle opened lengthways in its lower Part.
- B. B. Eggs of divers Bigness contain'd in the membranous Substance of the *Testis*.
- C. C. Sanguiferous Vessels proceeding plentifully from the Middle and Upper-part of the *Testis* to the Eggs.
- D. D. The Ligament of the Testicles, whereby they are knit to the Womb, cut off.
- E. A Part of the *Fallopian* Tube cut off.
- F. The Cavity of the said Tube.
- G. The small Hole in the End of the same Tube.
- H. H. The leafy or fimbriated Expansion at the End.
- I. The said leafy Part knit to the *Testis*.

Fig. V. Is a Representation of a *Fætus*, its Position, the Vessels connecting it with the Womb, &c. near the Birth.

- A. A. Portions of the *Chorion* dissected and removed from their Place.
- B. A Portion of the *Amnion* dissected.
- C. C. The Parts of the Womb dissected and laid open.
- D. D. The *Placenta* adhering to the Womb, to which the *Fætus* is connected.
- Z
- E. The

E. The Divarication of Vessels, which form
F. F. The *Funiculus* or Navel-String, which contains
the Umbilical Vessels as they proceed from the
Placenta to the Navel of the *Fætus*.

G. G. The *Fætus* now perfect and ready for its Exit, in
its proper and usual Position at that Time.

H. The Insertion of the Umbilical Vessels in the
Navel of the *Fætus*.

Fig. VI. Is a View of the *Fætus* taken out of the Womb,
together with the *Placenta*, to which it is yet
tied by the *Funiculus*.

A. A. A. The *Abdomen* of the *Fætus* laid open.

B. The Liver.

C. The Bladder.

D. D. The Intestines.

E. The Umbilical Vein.

F. The Umbilical Artery.

G. The *Urachus*.

H. The said Umbilical Vessels without the Body in-
cluded in one common Coat or Membrane.

I. I. I. The *Funiculus* proceeding from the *Placenta* to
the *Fætus*.

K. A Ligature therein, by which means the Veins be-
low swell, and the Arteries sink or grow less.

L. L, &c. The Veins and Arteries dispersed thro' the *Placenta*.

M. M. M. The *Placenta* itself spread out, shewing the In-
sertion of the Umbilical Vessels, and the Network
they make by their Intercourse and mutual Ra-
mifications.

Fig. VII. Shews the Posture and Site of the *Fætus* in the
Womb during the Time of Gestation in general.

A. The prone Position of the Head hiding the Nose
between the Knees.

B. B. The Buttocks, against which the Heels rest.

C. C. The Arms embracing the Legs bent up.

D. D. The *Funiculus* coming over the Forehead, and
going to its Insertion.

Fig. I. **I**S a Delineation of the Trunks and Ramifications of the Arteries dissected from an adult human Body when display'd and dried; as they are now to be seen in the *Musæum* of the Royal Society.

1. The Trunk of the *Aorta* cut from the Basis of the Heart.
2. The Part whence the *Coronaries* arise.
3. The Part where the *Canalis Arteriosus* of a *Fœtus* terminates.
4. The *Axillary* or *Subclavian* Arteries.
5. The *Carotid* Artery.
6. The *Cervical* Artery. *Note*, These two last mentioned Arteries arise from the Trunk of the *Aorta*, which is different from what is usual, and is to be seen in Fig. II. 5. 5. 6. 6.
7. The Arteries that carry Blood to the lower Parts of the Face, Tongue, adjacent Muscles, and Glands.
8. The Trunk of the *Temporal* Artery; whence
9. A Branch goes to the *Parotid* Gland, and
10. Another to the *Temples* and Parts adjacent.
11. The *Occipital* Arteries.
12. The Arteries which convey Blood to the *Fauces*, *Epiglottis*, and adjacent Muscles.
13. The Trunk of the *Carotid* Artery cut off before its *Contortion* in passing the Scull.
14. The Trunk of the Artery of the Arm, sending Branches to the divers Muscles and Parts thereof.
15. The Division thereof at or below the Flexure of the Cubit.
16. The external Artery of the Cubit, which makes the Pulse.
17. The Arteries of the *Hand* and *Fingers*.
18. The *Mammary* Artery.
19. The descending Trunk of the *Aorta*.
20. 20. The *Intercostal* Arteries.

21. The *Cæliac* Artery.
22. The *Hepatic* Artery.
23. The Trunk of the *Splenic* Artery.
24. The Trunk of the *Epiploic* Artery.
25. A Branch passing to the Bottom of the *Stomach*.
26. The superior *Coronary* Branch of the *Stomach*.
27. 27. The superior *Mesenteric* Artery.
28. 28. The *Emulgent* Arteries.
29. The inferior *Mesenteric* Artery.
30. 30. The *Lumbal* Arteries.
31. 31. The two *Spermatic* Arteries, call'd *Præparantes*.
32. The *Iliac* Artery.
33. The *Arteria Sacra*.
34. The internal *Iliac* Branch.
35. The external one.
36. The *Epigastric* Artery.
37. Branches passing to the Muscles of the *Abdomen*.
38. 38. Arteries passing to the Muscles of the Thigh and Leg.
39. The *Crunal* Artery.
40. The *Umbilical* Artery, with those of the *Penis*.
41. The *Crunal* passing under the *Ham*.
42. The three Trunks of the Arteries of the *Leg*.
43. The Arteries of the *Foot* and *Toes*.

Fig. II. Shews the Trunks and some of the Ramifications of the Arteries of an adult human Body injected with Wax, to shew the Variety in Nature, and supply the Deficiency of these Parts in the foregoing Figure.

A. The Section of the *Aorta* at the Heart, serving the three *Semilunar Valves* already described.

B. A Portion of the *Arteria Pulmonalis*.

b, b. Its Division before it enters the Lobes of the Lungs.

C. The descending Trunk of the *Aorta*.

D, D. The internal *Mammary* Arteries.

1. The Trunk of the *Aorta* cut off at the Basis of the Heart.

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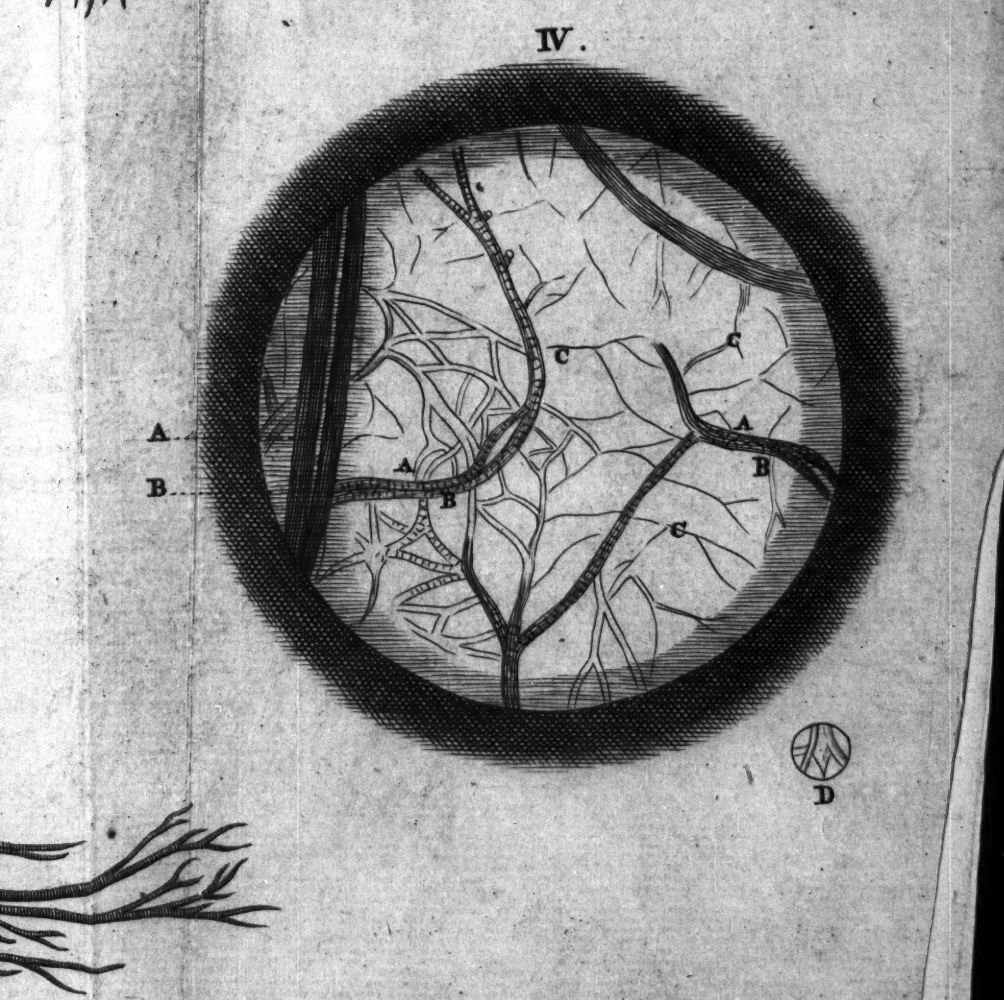
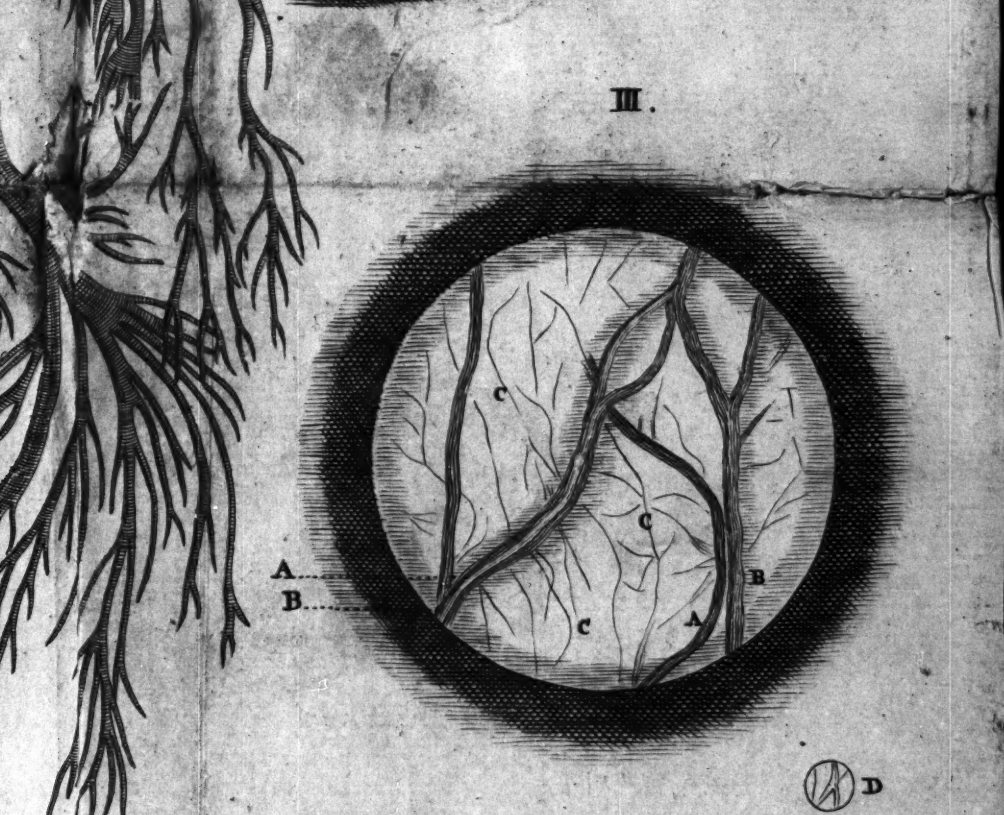
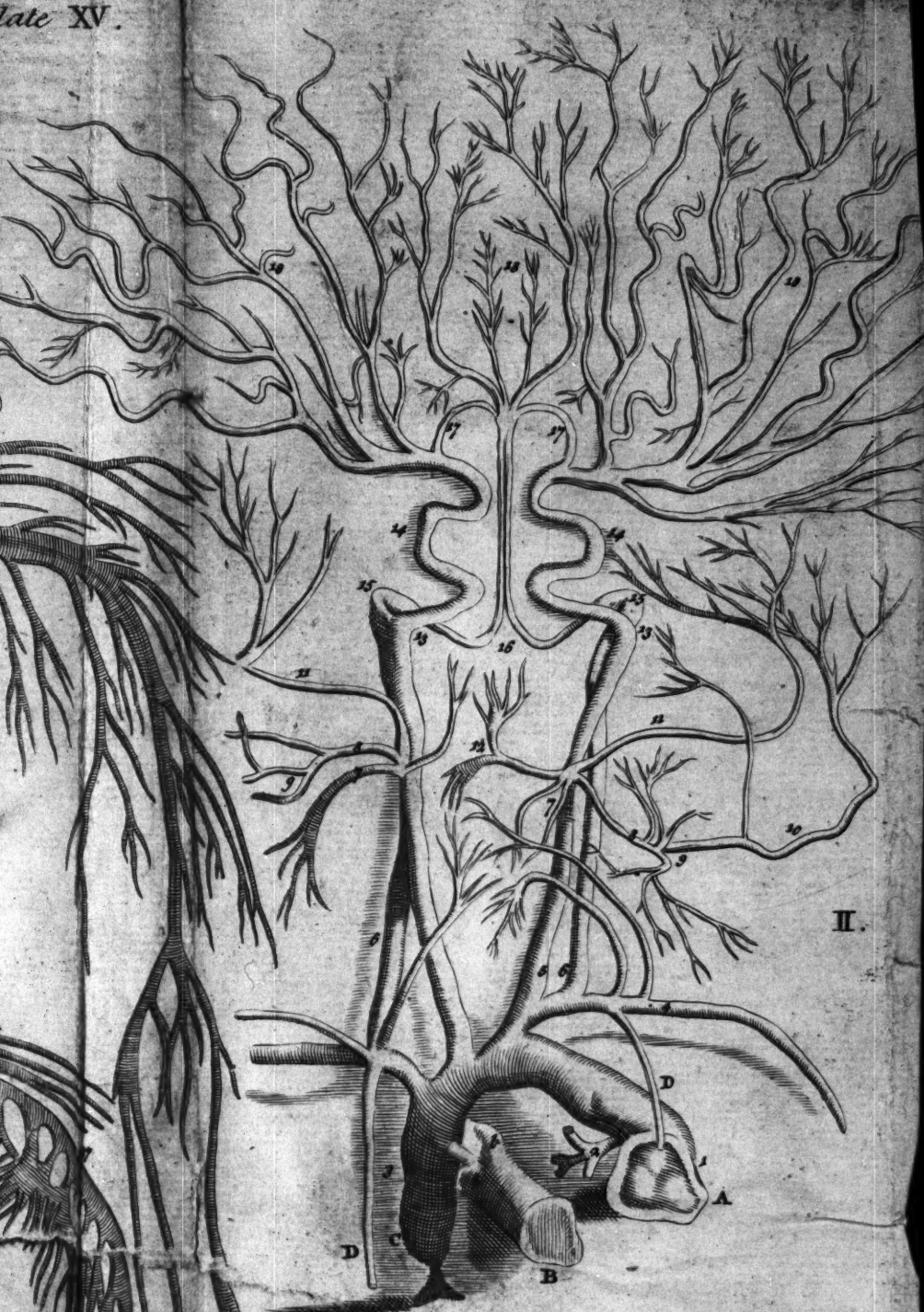
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Fig. 1.







2. The Trunk of the *Coronary* cut off.
3. The *Canalis Arteriosus* in a *Fœtus*.
4. The Trunk of the Subclavian Artery.
5. 5. The *Carotids*.
6. 6. The *Vertebrals*.
7. 7. The Arteries passing to the lower Parts of the
Face, Tongue, Muscles, and Glands adjacent.
8. 8. The Trunks of the *Temporal* Arteries, giving
9. 9. Branches to the *Parotid* Glands ; and
10. 10. Others to the *Temples, &c.*
11. 11. The *Occipital* Arteries.
12. 12. The Arteries of the *Fauces, Gargareon, &c.*
13. 13. The *Contortions* of the *Carotid* Arteries as they
pass the *Basís* of the Scull.
14. 14. Those Parts of their Trunks which pass on each
Side of the *Sella Turcica* ; whence divers small
Branches arise which help to compose the
Rete Mirabile.
15. 15. The *Contortions* of the *Vertebral* Arteries.
16. 16. The *Vertebrals* as they ascend on the *Medulla Ob-*
longata towards the annular Protuberance, or
Pons Varioli.
17. 17. The communicant Branches of the *Carotid* and
Vertebral Arteries.
18. 18. The fine Ramifications of the Arteries thro' the
Brain displayed.

Fig. III. Shews the Appearance of the Circulation of the
Blood as viewed thro' a *Microscope* in the ca-
pillary Extremities of the Blood-Vessels in the
Omentum of a live Dog ; and

Fig. IV. Is a View of the same Thing in a living Dog's
Mesentery.

- A. A. The Branches of the Arteries ; and
- B. B. The associating Veins.
- C. C. The capillary Branches, whereby they pass from
each other, and inosculate at their Extremities.
- D, D. The small *Arææ* (here view'd with the *Micro-*
scope) as they appear to the naked Eye.

Fig. I. **I**S a Delineation of the Trunks of the *Vena Cava* with their Branches, dissected from an adult human Body, displayed and dried in the Repository of the *Royal Society*, as they are yet there to be seen.

A. A. The Orifice of the *Vena Cava*.

B. The superior or descending Trunk of the *Cava*.

C. C. The inferior or ascending Trunk.

D. D. The Subclavian Veins.

a. The Orifice of the Coronary Vein.

b. The *Azygos* with its Branches going to the Ribs
e. e.

c. The superior *Intercostal*.

d. d. The internal *mammary* Veins.

E. E. The *Iliac* Branches.

F. F. The internal *Jugulars*.

G. G. The external *Jugulars*.

H. H. The Veins from the Lower Jaw and its Muscles.

I. I. The Trunks of the internal *Jugulars* cut off at the Basis of the Skull.

f. The Veins of the *Thymus* and *Mediastinum*.

g. g. The Veins of the *Thyroid* Glands.

h. The *Vena Sacra*.

i. The internal *Iliac* Branch.

k. The external one.

K. K. The *Occipital* Veins.

L. That Part of the *Subclavian* call'd the *Axillary* Vein.

M. The *Cephalic* Vein.

N. The *Basilic*.

O. The *Median*.

P. The Trunk of the *Hepatic* Veins.

Q. The *Phrenic* Vein on the Left Side.

R. The same on the other Side.

r. A Vein from the Left *Renal Gland* and Parts adjacent.

S. The Left *Emulgent* Vein.

T. The

- T. The Right one, lower than the Left here, which is not usual.
- V. V. The two Spermatic Veins.
- X. X. The two communicant Branches between the descending Trunk of the *Cava* and *Vena Azygos*.
- y. A Vein which brings Blood from the Muscles of the *Abdomen* into the external *Iliac* Branch.
- Z. The *Epigastric* Vein of the Right Side.
- l. l. The *Saphena* Vein.
- †. The Part of the Left *Subclavian* where the *Thoracic* Duct enters it, and discharges its *Chyle* and *Lympha*.

These are the principal Trunks of the Veins; as for the more minute Branches, a tedious Description of them is not to be here expected, and is only well to be understood from an actual View of them in a Subject under Dissection.

Fig. II. Represents some of the large Trunks of the Veins and their *Sinus's* within the Scull, with the Beginnings of the internal Jugulars fill'd with Wax, and dried, together with the *Falx*, &c. which could not be shewn in the last Figure.

- A. The Extremity of the *Falx* cut from the *Crista Galli*.
- a. Its low *Limbus* that touches the *Corpus Callosum*, dividing the two Lobes of the Brain.
- B. B. The second Process of the *Dura Mater* between the *Cerebrum* and *Cerebellum*.
- C. A Portion of the *Dura Mater* remaining to the longitudinal *Sinus*.
- D. D. Several Trunks of the Veins cut off before they enter.
- E. E. The longitudinal *Sinus's*.
- F. F. The two lateral *Sinus's*.
- G. The 4th *Sinus*.

g. The

- g. The Veins from the *Plexus Choroides*.
 H. H. The *Bulbi* or *Diverticuli* at the Beginning of
 I. I. The internal Jugular Veins.
 K, K. The Veins which bring Blood from the Lower
 Jaw and Parts adjacent.
 Fig. III. The Trunks of the *Vena Portæ* dissected and display'd; done from the original Scheme in the Repository of the *Royal Society*.
 A. A. A. The Branches of the *Vena Portæ* freed from the Liver.
 B. The *Splenic* Branch.
 C. C. The *Mesenteric* Branches continued from the *Intestines*.
 D. The superior Coronary Vein of the Stomach on the Left Side.
 E. The inferior one on the Right Side.
 F. The same on the Left Side removed from their proper Situations.
 G. The Vein call'd *Vas breve*.
 H. The *Hæmorrhoidal* Vein, which here discharges itself into the Left *Mesenteric* Branch, tho' usually it ends in the *Splenic* B.
 a. The Umbilical Vein.
 b. The *Vena Pancreatica*, which also receives Branches from the *Duodenum*.
 c. c. The right superior Gastric *Coronary* of the Stomach.
 d. The *Vena Duodeni*.
 1. The Right, } *Epiploic* Branches of the inferior
 2. The Left, } *Coronaries* of the Stomach.
 3. The Middle, }
 N. B. Tho' these Figures of the Veins were actually drawn from the Life, and differ considerably from many others extant, yet we are not to suspect the Truth and Goodness of all others; since Nature is not obliged to be the same in
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her Operations, but in different Subjects is often pleased to vary the Humour and Method of Procedure.

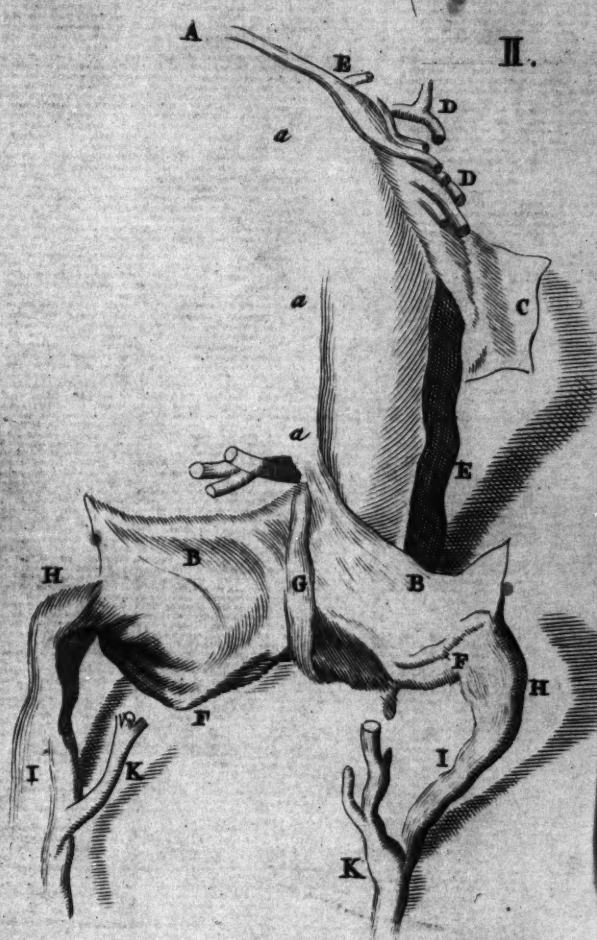


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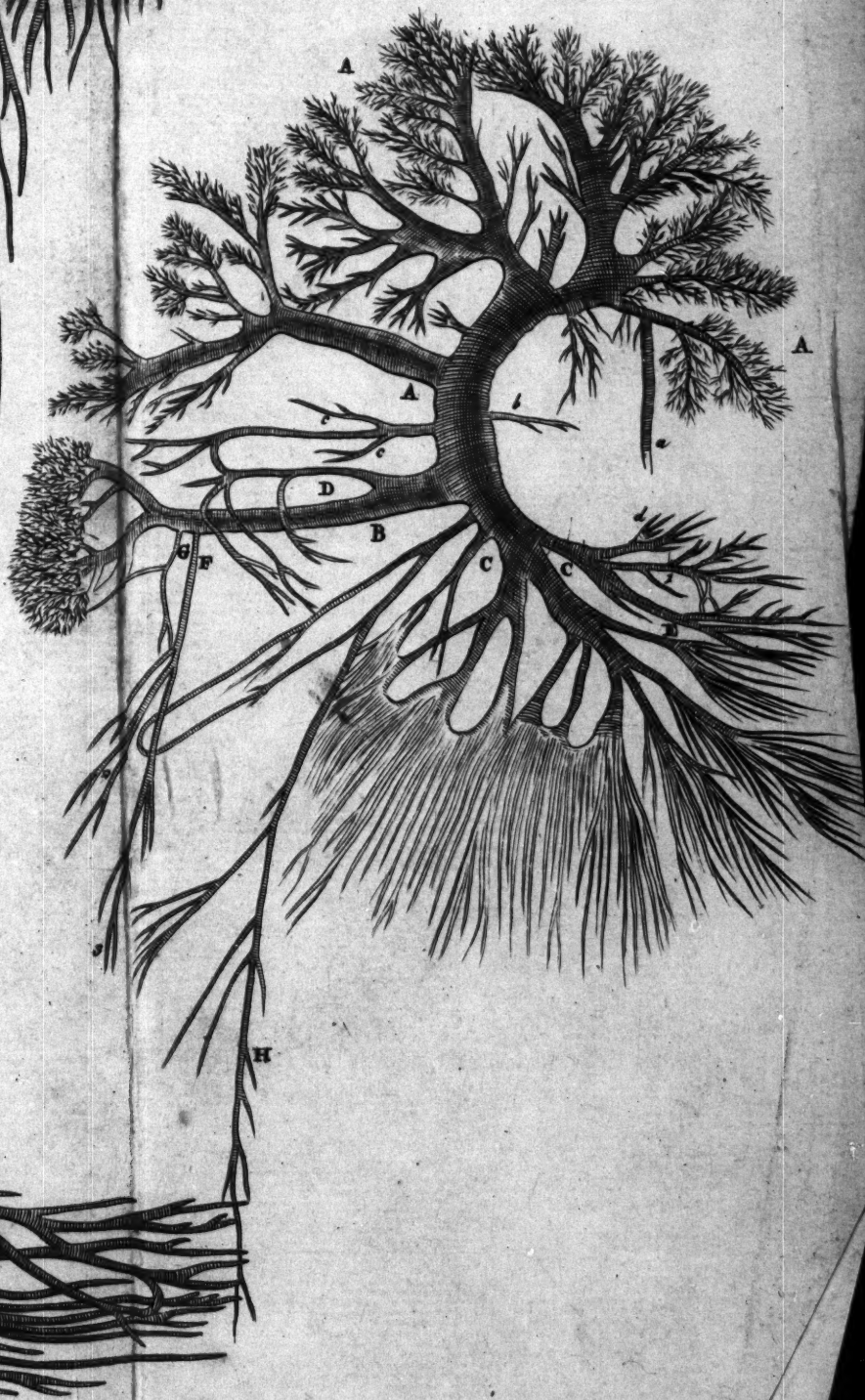
VI

Fig. I.





III.



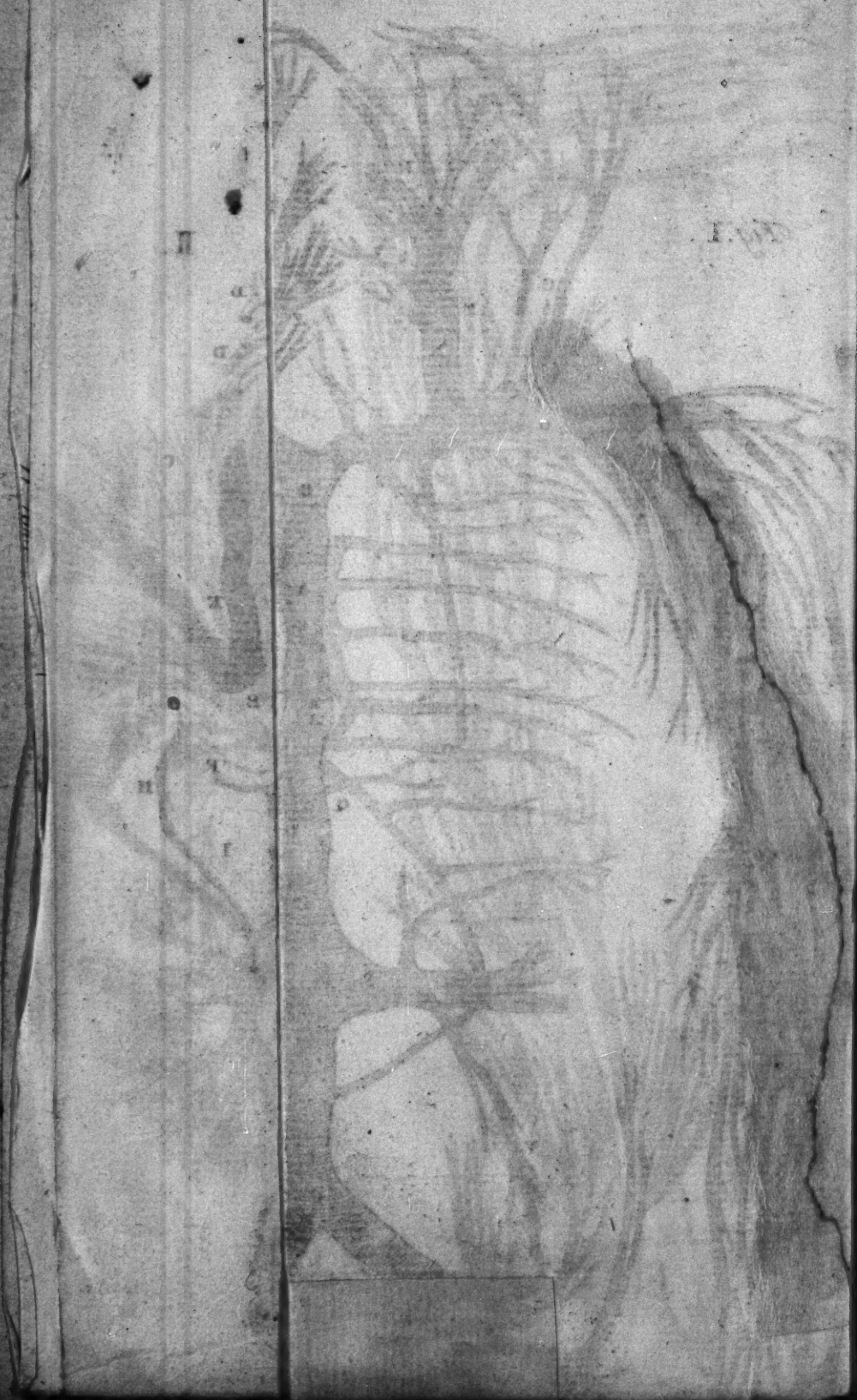


Fig. 1. **S**hews the *Origin* of the *Nerves* from the *Basis* or Under-part of the *Brain*, and the *Com-*
pages of the nervous *System* within the *Trunk*
of the *Body*.

A. A. The *Olfactory* Nerves.

B. B. The *Optic* Nerves cut off.

C. C. The Pair call'd the *Motores Oculorum*.

D. D. The *Pathetic* Nerves.

E. The *Processus Annulares*.

F. F. The three Branches of the fifth Pair.

G. G. The sixth Pair.

H. H. The Portions of the *Auditory* Nerves.

I. I. The Origin of the eighth Pair, or *Par Vagum*.

K. K. The large Trunks thereof.

M. M. The *Recurrent* Nerves.

N. The Left Nerve of the ninth Pair.

O. The Right Nerve thereof.

P. P. The *Corpora Pyramidalia*.

Q. Q. The tenth Pair cut off according to *Lancisi*.

R. R. The Extremities of the *Intercostals*, or eleventh
Pair.

S. S. The great Trunks of these Nerves.

T. U. The *Accessory* Nerve of the eighth Pair.

X. X. The Nerves of the *Diaphragm*.

Y. The inferior Aperture of the *Infundibulum*.

Z. Z. The Nerves which go to the *Testes*, *Uterus*, &c.

1. 1. The Nerves which go to the Arms.

2. 2. The Communications of the *Vertebral* and *In-*
tercostal Nerves.

3. 3. The *Crunal* and *Sciatic* Nerves cut off.

Fig. II. } From *a* to *k* the References are the same as in
III. } the foregoing Figure.

L. L. The *Accessory* Nerve of the eighth Pair.

M. M. The *Chorda Tympani*.

N. N. The Communication of the *Portio Dura* of the
Auditory Nerve with the lower *Maxillary*
Nerve.

O. O. The *Ophthalmic* Nerve.

P. P. The superior *Maxillary* Nerve.

Q. Q. The inferior *Maxillary* Nerve.

Fig. IV. Shews the *Spinal Marrow* and the *Nerves* proceeding therefrom.

A. The Beginning of the *Spinal Marrow* near the *Scull*.

B. B. B. B. A Series of nervous Branches or Threads passing from the *Medulla* between the *Vertebrae*.

C. C. C. The Body of the *Medulla* or Marrow, as it descends the Spine.

D. d. d. D. Branches which arise from three Pair of the Neck and two of the Breast, proceeding to the Arms and Hands.

E. The *Plexus* or Commixture of these Nerves.

F. F. The first Pair of the Hands.

G. G. The second Pair.

H. H. The third Pair.

I. I. The fourth Pair, and bigger than the rest.

K. K. The fifth Pair.

L. L. The sixth Pair, lying just under the Skin.

M. The first *Crural* Nerve.

N. N. The second *Crural* Nerve.

O. O. O. The Branch thereof which accompanies the *Saphena* Vein.

P. P. The third *Crural* Nerve.

Q. Q. Q. The fourth and greatest of all.

R. R. The external Branch.

S. S. The internal Branch.

Fig. V. Shews more largely and accurately the *Spinal Marrow* taken out of its bony Chancel, and divested of the Membrane cloathing it, that the Beginnings and Productions of all the *Vertebral Nerves* might be seen together.

A. A. The Top of the *Spinal Marrow* cut off from the *Medulla Oblongata*.

B. The

B. The Spinal Artery, made up of several Twigs from the *Aorta*, entering between the *Vertebrae*.

C. C. The Spinal Nerve coming from the fifth or sixth *Vertebra* of the Neck to the Beginning of the *Par Vagus*.

D. D. Portions of the Membrane cloathing the Marrow dissected and rolled off.

E. E. E. The Spinal Nerves sent out of the Marrow on each Side by Pairs to the Number of 30.

F. f. The Nerves of the Neck.

G. g. The Nerves destined for the Shoulder and Arm.

H. h. The Nerves going out about the Back and Loins.

I. i. The Nerves which go out for the Thighs.

K. Nerves going out of the *Os Sacrum*.

Fig. VI. Is a compendious View of the Origin, Ramifications, and *Plexus* in the nervous System, form'd especially by the *Par Vagus*, the Intercostals, &c. Nerves.

A. The Upper, } *Plexus* of the *Par Vagus*.
B. The Lower }

a. A Branch sent to the Upper-part of the *Trachea*.

C. Several Branches going to the Heart, *Pericardium*, and *Plexus Nervosus* at the Heart.

D. The Recurrent Nerve springing from the *Plexus* B on the Right Side; and

E. From the Body of the Nerve itself on the Left Side.

F. The *Plexus Nervosus* of the Heart.

d. e. f. Several Branches spent on the *Heart*, *Lungs*, &c.

G. H. Two Branches into which the *Par Vagus* divides itself on each Side.

g. b. Branches sent to the *Lungs*, *Gullet*, &c.

I. The *Plexus Nervosus* formed on the Stomach by the united Branches of the *Par Vagus*, and the very minute Ramifications in which they there end.

K. A *Plexus*

K. A *Plexus* or *Ganglion* in the Neck, formed by the Branches of the fifth and sixth Pair (marked 5 and 6 at their Origin.)

L. A great Branch sent to the *Plexus Nervosus* of the Heart.

M. The Nerve of the *Diaphragm*.

N. The *Intercostal* Nerve, which, in its Passage thro' the *Thorax*, admits Branches from the *Vertebral Nerves n. n. n.*

P. A Branch sent from the Left *Intercostal* to

Q. The Lesser *Mesenteric Plexus* on the Left.

R. Other Branches springing from the *Intercostal* Nerve.

S. The Nerves which communicate between the *Stomachic* and Left *Mesenteric Plexus*.

T. The *Mesenteric Plexus* on the Right.

V. V. The Great *Mesenteric Plexus*, from whose Middle *u* proceed vast Numbers of Twigs to the Intestines.

W. The Kidney, which also receives Nerves from the said *Plexus*.

X. Y. Two other Lesser *Plexus* of the *Mesentery* placed below the Greater.

Z. Z. Small Nerves going to the *Penis*.

r. r. The Ramification of Nerves among the Intestines.

t. t. Nerves going from the *Intercostals* to the Lower *Plexus* of the *Mesentery*.

w. Nerves which run across and knit together the *Intercostals* in the bending of the *Os Sacrum*.

x. The Inclination of the *Intercostals* to each other where they begin to ramify; and

y. The fine Fibres thereof distributed to the *Sphincter* of the *Anus*, where these notable Nerves end.

F I N I S.

IVX

III

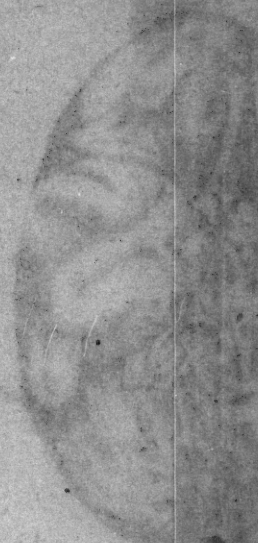
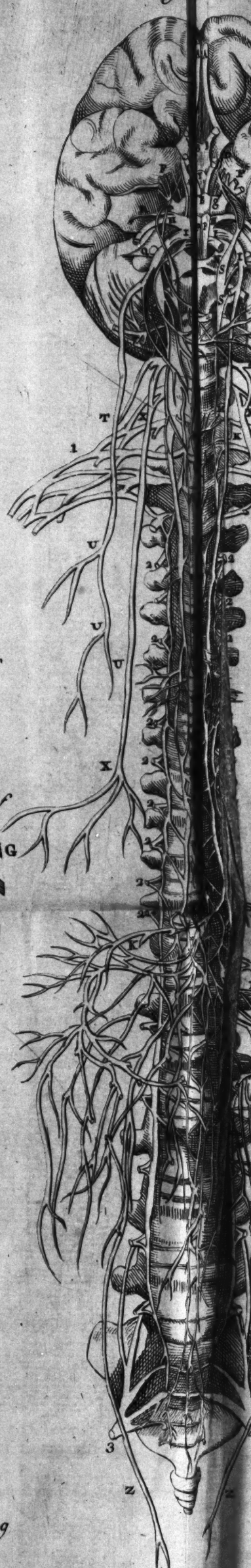
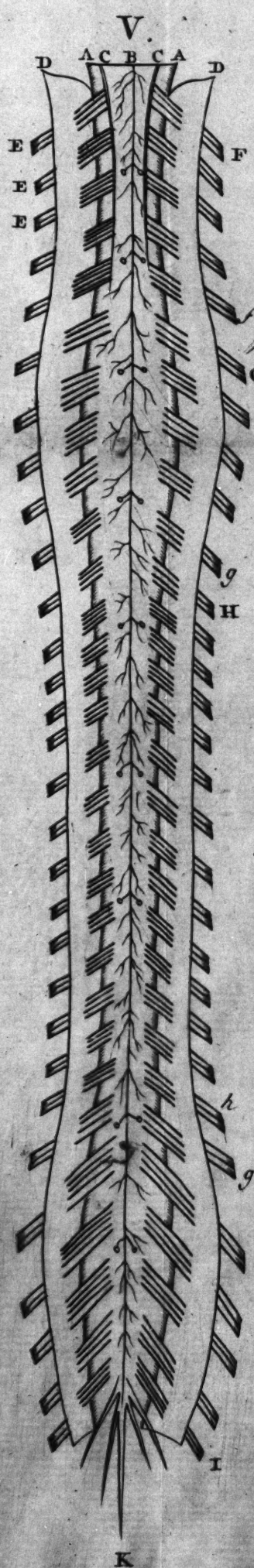


Fig. 1.



II.

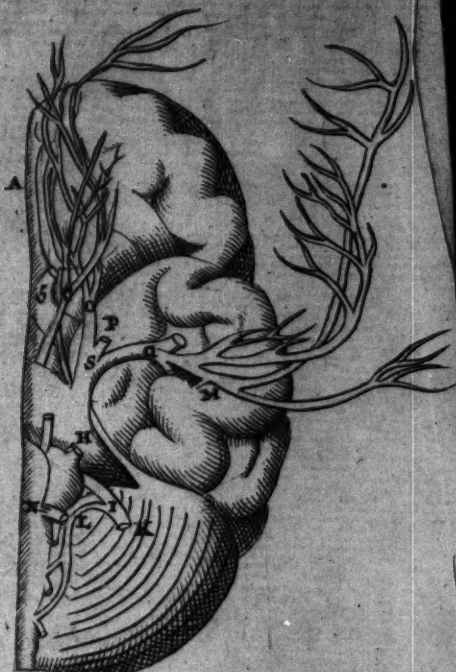


VI.





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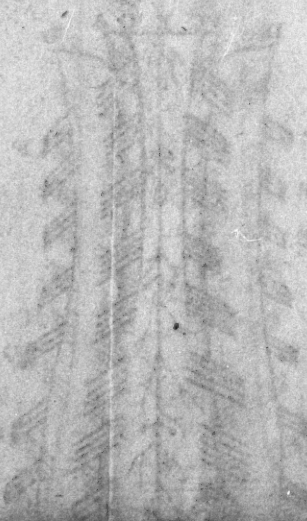


IV.



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H





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